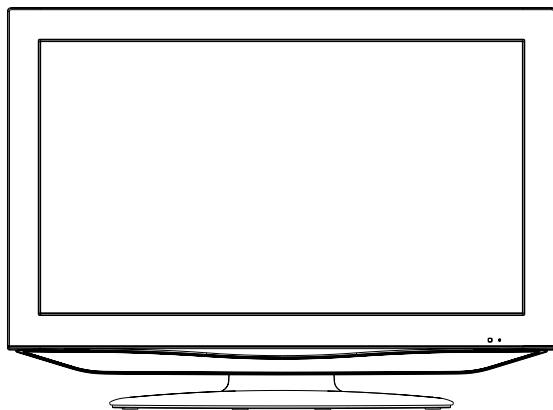


SHARP SERVICE MANUAL

#DRAFT#



LCD COLOR TELEVISION

MODEL **LC-32AV22U**

In the interests of user-safety (Required by safety regulations in some countries) the set should be restored to its original condition and only parts identical to those specified should be used.

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SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES


As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a  mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the external exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease (YG6260M) on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF printing on the PCB.

(Please refer to figures.)



Caution:

- Pb free solder has a higher melting point than standard solder;
Typically the melting point is 86°F~104°F(30°C~40°C) higher.
Please use a soldering iron with temperature control and adjust it to 650°F ± 20°F (350°C ± 10°C).
In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF printing must be serviced with lead free solder.
When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn-3.0Ag-0.5Cu.

GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	31.5 inch / 800.4mmV
			LCD Type	Color TFT LCD
			Number of Pixels	1366(H) x 768(V)
			View Range	88/88 degree
			Left/Right Up/Down	88/88 degree
G-2	Tuning System	Broadcasting System		US System M
				ATSC(8VSB)/QAM
		Tuner and Receive CH		1Tuner
				US (W/CABLE)
		CH Coverage		2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Digital		44.00MHz
		Frequency Analog		45.75MHz
		Picture(FP)		41.25MHz
		Sound(FS)		4.50MHz
		FP-FS		
G-3	Signal	Video Signal	Input Level	1 V p-p/75 ohm
			Output Level	--
			S/N Ratio (Weighted)	--
			Horizontal Resolution at DVD Mode	--
				--
		RGB Signal		Output Level
		Audio Signal	Input Level	0.85 V p-p/50k ohm
			Output Level	--
			at DVD	0.85 V p-p/1k ohm
			at TV	0-1.70 V p-p/1k ohm (Variable out mode)
			Digital Output Level	0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)	--
			Harmonic Distortion	--
			Frequency Response :	--
G-4	Power	Power Source	AC	120V, 60Hz
			DC	--
		Power Consumption	at AC	170W at 120V 60Hz
			at DC	--
		Stand by (at AC)		1W at 120V 60Hz
G-5	Regulation	Energy Star		Yes
		Per Year		-- kWh/Year
		Protector	Power Fuse	Yes
			Safety Circuit	Yes
			IC Protector(Micro Fuse)	Yes
G-6	Temperature	Safety		UL(UL6500_2nd)/CSA(E60065_00)
		Radiation		FCC / IC
		Laser		--
G-7	Operating Humidity	Operation		0oC ~ +40oC
		Storage		-20oC ~ +60oC
G-8	Clock and Timer	Clock		Yes
		Sleep Timer	Max Time	120 Min
			Step	10 Min
		On Timer	Program	Yes
		Off Timer	Program	No
		Game Timer		No
		Wake Up Timer		No
		Timer Back-up (at Power Off Mode)	more than	-- Min Sec

GENERAL SPECIFICATIONS

G-9	Remote Control	Unit	RC-MQ
		Glow in Dark Remocon	No
		Remocon Format	SHARP
		Format	SHARP
		Custom Code	10000 / 10001
		Power Source	3V
		Voltage(D.C)	UM-3 x 2 pcs
		UM size x pcs	
		Total Keys	40 Keys
		Keys	POWER
		FUNCTION	No
		Source POWER	No
		DISPLAY	Yes
		LIGHT	No
		SEARCH+	No
		SEARCH-	No
		PLAY	No
		REC	No
		STOP	No
		PAUSE	No
		SKIP+	No
		SKIP-	No
		VIEW MODE	Yes
		1	Yes
		2	Yes
		3	Yes
		4	Yes
		5	Yes
		6	Yes
		7	Yes
		8	Yes
		9	Yes
		0	Yes
		.	Yes
		ENT	Yes
		INPUT	Yes
		FLASH BACK	Yes
		VOL+	Yes
		VOL-	Yes
		CH+	Yes
		CH-	Yes
		SURROUND	Yes
		MUTE	Yes
		FREEZE	Yes
		MENU	Yes
		LEFT	Yes
		ENTER	Yes
		RIGHT	Yes
		UP	Yes
		DOWN	Yes
		EXIT	Yes
		RETURN	Yes
		FAVORITE A	Yes
		FAVORITE B	Yes
		FAVORITE C	Yes
		FAVORITE D	Yes
		FAVORITE	No
		SLEEP	Yes
		AUDIO	Yes
		AV MODE	Yes
		CC	Yes

GENERAL SPECIFICATIONS

G-10	Features	Auto Shut Off	Yes
		Auto Search	No
		Power On Memory	No
		Comb Filter	Yes
			<u>3</u> -D
		Game Position	No
		Auto Setup(Language/CH Program)	No
		Picture Setting(TV)	Yes
		AV Mode(Picture Preference)	Yes
		Brightness , Contrast , Color	Yes
		Tint	Yes
		Sharpness	Yes
		Color Temperature	Yes
		Cable Clear	No
		Backlight	Yes
		Picture Setting(PC)	Yes
		Brightness , Contrast	Yes
		HOR Position , VER Position	Yes
		Phase, Clock	Yes
		Red, Green, Blue	Yes
		Auto Adjust	No
		Backlight	Yes
		Audio	MTS
		Tone Control (Bass/Treble/Balance)	Yes
		Stable Sound	No
		Surround	Yes
		BBE	No
		SRS WOW (SRS 3D/Focus/Tru Bass)	No
		Variable Audio Out	Yes
		Tuning	CH Program
		Air/Cable	Yes
		ADD/DELETE	Yes
		Label	CH Label
		Video Label	Yes
		Favorite CH	Yes
		V-Chip	Yes
		Type	<u>USA/CANADA Type</u>
		RRT Setup	Yes
		Lock	Hotel Lock
		Channel Lock	No
		Video Lock	No
		Panel Lock	No
		OSD Language	English French Spanish
		Closed Caption	Yes
		CC Advanced	Yes
		View Mode (Picture Size)	Yes
		Picture Scroll	Yes
		Cinema Mode	Yes
		Aspect	Yes
		PFC(Power Factor circuit)	No
		Freeze frame	Yes
		PIP/POP	No
		Direct Input Selection	Yes
		Digital Out	Dolby Digital
		MPEG	No
		PCM	Yes
		DTS	No
		PC Monitor Input	Yes
		VGA (640x480)	Yes (60Hz)
		VGA (720x400)	Yes (70Hz)
		WVGA (848x480)	Yes (60Hz)
		SVGA (800x600)	Yes (60Hz)
		XGA (1024x768)	Yes (60Hz)
		WXGA (1280x768)	Yes (60Hz)
		WXGA (1280x720)	Yes (60Hz)
		WXGA (1360x768)	Yes (60Hz)
		SXGA (1280x1024)	No

GENERAL SPECIFICATIONS

		HDMI Input	VGA (640x480)	Yes (60Hz)
			720x480i (4:3)	Yes (60Hz)
			720x480i (16:9)	Yes (60Hz)
			720x480p (4:3)	Yes (60Hz)
			720x480p (16:9)	Yes (60Hz)
			720x576i (4:3)	No
			720x576i (16:9)	No
			720x576p (4:3)	No
			720x576p (16:9)	No
			1280x720p	Yes (60Hz)
			1920x1080i	Yes (60Hz)
		Component Input		Yes
			720x480i (4:3)	Yes (60Hz)
			720x480i (16:9)	Yes (60Hz)
			720x480p (4:3)	Yes (60Hz)
			720x480p (16:9)	Yes (60Hz)
			720x576i (4:3)	No
			720x576i (16:9)	No
			720x576p (4:3)	No
			720x576p (16:9)	No
			1280x720p	Yes (60Hz)
			1920x1080i	Yes (60Hz)
G-11	Accessories	Owner's Manual	Language	English/French/Spanish
			w/Guarantee Card	Yes
		Remote Control Unit		Yes
		Rod Antenna		No
			Poles	--
			Terminal	--
		Loop Antenna		No
			Terminal	--
		U/V Mixer		No
		DC Car Cord (Center+)		No
		Guarantee Card		No
		Warning Sheet		No
		Circuit Diagram		No
		Antenna Change Plug		No
		Service Facility List		No
		Important Safeguard		No
		Dew/AHC Caution Sheet		No
		Quick Set-up Sheet		No
		Battery		Yes
			UM size x pcs	UM-3 x 2 pcs
			OEM Brand	No
		AC Adapter		No
		AC Cord (for AC Adapter)		No
		AC Cord (Flat Polarity Plugs)		Yes
		Cable Cramp		Yes
		Stand		Yes
		Stand Screw		Yes
		Hexagon Wrench		Yes
		AV Cord (2Pin-1Pin)		No
		Registration Card (NDL Card)		Yes
		300 to 75ohm Antenna Adapter		No
		Sheet Information (Return)		No
		Sheet Information (HDMI)		No

GENERAL SPECIFICATIONS

G-12	Interface	Switch	Top	Power (Tact)	Yes
				Channel Up/Menu Up	Yes
				Channel Down/Menu Down	Yes
				Volume Up/Menu >	Yes
				Volume Down/Menu <	Yes
				Menu	No
				Play	No
				Eject	No
				Skip+, Search+	No
				Skip-, Search-	No
				Still/Pause	No
				Stop	No
				Main Power SW	No
		Indicator	Rear	Input Select	Yes
				Main Power SW	No
				Power/Stand-By On Timer	Yes (Green / Red) No
		Terminals	Side	Video Input 1	RCA x 1
				Audio Input 1	RCA x 2(L/MONO, R)
				S - Input 1	Yes
				Video Input 2	RCA x 1
				Audio Input 2	RCA x 2(L/MONO, R)
				S - Input 2	Yes
				Video Output	No
				Audio Output	RCA x 2 (Variable) (L, R)
				Component Input 1	RCA x 3
				Analog Audio	RCA x 2(L/MONO, R)
				Component Input 2	No
				Analog Audio	No
				HDMI Input 1	HDMI x 1
				Analog Audio	Mini Jack
				HDMI Input 2	HDMI x 1
				Analog Audio	No
				Sub Woofer Out	No
				PC Monitor Input	Yes
				Analog Audio	HDMI 1 Audio Input Alternative
				Digital Audio Output	Coaxial
				DC Jack (Center +)	No
				VHF/UHF Antenna Input	F Type
				Video Input 3	No
				Audio Input 3	No
				S - Input 3	No
				Other Terminal	No
			Rear	AC Inlet	Yes
G-13	Set Size	Approx. W x D x H (mm)			797 x 243 x 583
		w/o Handle, Stand Approx. W x D x H (mm)			797 x 116 x 534
G-14	Weight	Net (Approx.)			15.0kg (33.5lbs)
		Net w/o Handle, Stand (Approx.)			13.5kg (29.9lbs)
		Gross (Approx.)			18.5kg (40.7lbs)
G-15	Carton	Master Carton	No		
			Content		
			--- Sets		
			Material		
			--- / ---		
		Gift Box	Dimensions W x D x H(mm)		
			Description of Origin		

			Material		
			Double/Brown		
		Drop Test	W/Color Photo Label		
			No		
			W/Handle		
			No		
			Dimensions W x D x H(mm)		
			900 x 286 x 659		
		Container Stuffing (40' container)	Description of Origin		
			Yes		
			1 Corner / 3 Edges / 5 Surfaces		
			Height (cm)		
			32		
G-16	Material	Cabinet	Front		
			PC+ABS 94V0 NON-HALOGEN		
			Rear		
		PCB	PS 94V0 NON-DECABROM		
			--		
			Jack Panel		
			Non-Halogen Demand		
			No		
			Eyelet Demand		
			Yes		

GENERAL SPECIFICATIONS

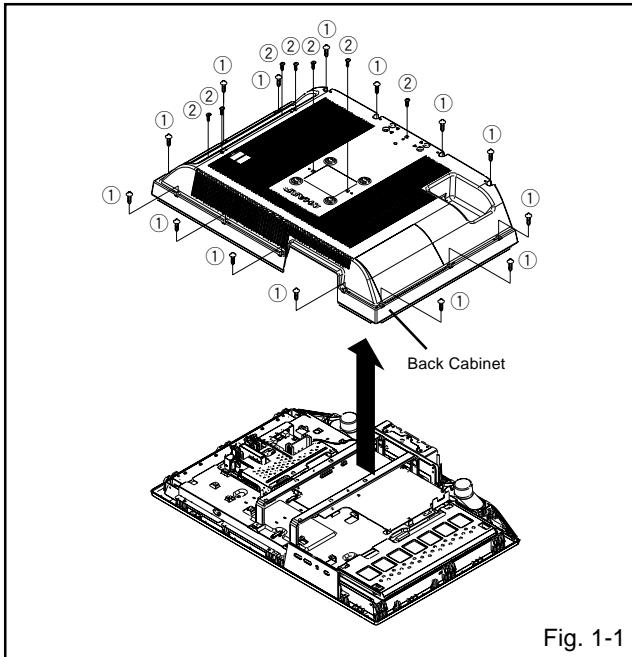
G-17	Environment	Environmental standard requirement	Green procurement of SHARP
		Pb-free	Phase3(Phase3A)
		Measures for Whisker	Yes
		Rohs	Yes

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

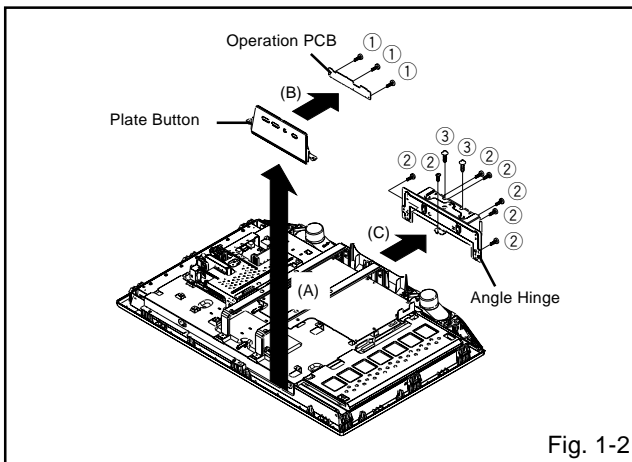
1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 14 screws ①.
2. Remove the 7 screws ②.
3. Remove the Back Cabinet in the direction of arrow.



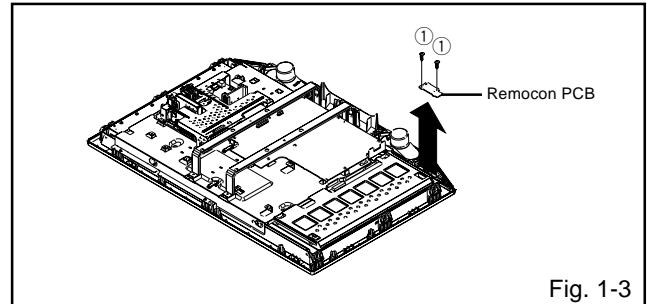
1-2: OPERATION PCB (Refer to Fig. 1-2)

1. Disconnect the following connector: (CP2203).
2. Remove the Plate Button in the direction of arrow (A).
3. Remove the 3 screws ①.
4. Remove the Operation PCB in the direction of arrow (B).
5. Remove the 7 screws ②.
6. Remove the 2 screws ③.
7. Remove the Angle Hinge in the direction of arrow (C).



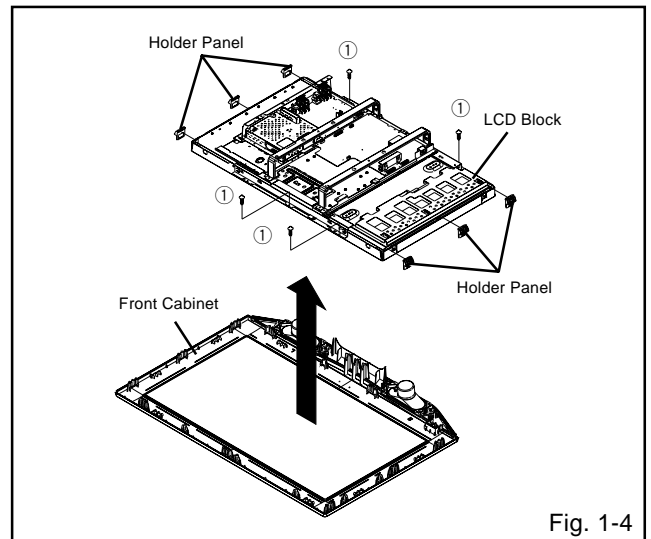
1-3: REMOCON PCB (Refer to Fig. 1-3)

1. Disconnect the following connector: (CP2201).
2. Remove the 2 screws ①.
3. Remove the Remocon PCB in the direction of arrow.



1-4: LCD BLOCK (Refer to Fig. 1-4)

1. Remove the Holder Panel.
2. Remove the 4 screws ①.
3. Remove the LCD Block in the direction of arrow.



DISASSEMBLY INSTRUCTIONS

1-5: DIGITAL PCB (Refer to Fig. 1-5)

1. Disconnect the following connectors:
(CP4307, CP6501, CP6503, CP6504, CP7200).
2. Remove the 3 screws ①.
3. Remove the screw ②.
4. Remove the 6 screws ③.
5. Remove the Plate Jack in the direction of arrow (A).
6. Remove the 9 screws ④.
7. Remove the Digital PCB and Shield Digital in the direction of arrow (B).

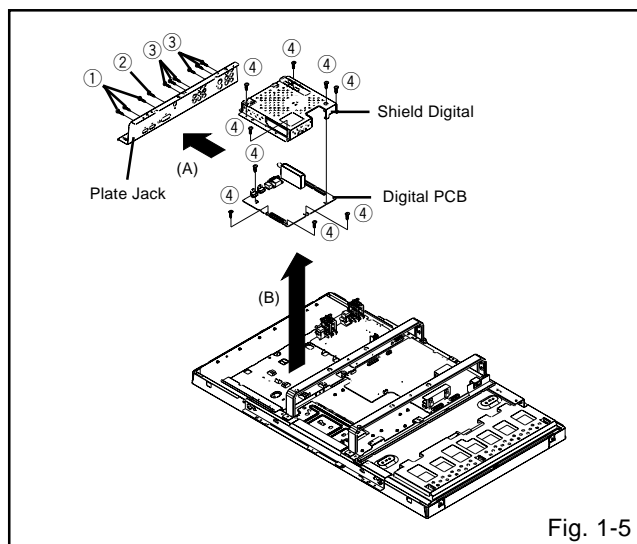


Fig. 1-5

1-6: AV PCB (Refer to Fig. 1-6)

1. Disconnect the following connectors:
(CP3801, CP3802).
2. Remove the 5 screws ①.
3. Remove the AV PCB in the direction of arrow.

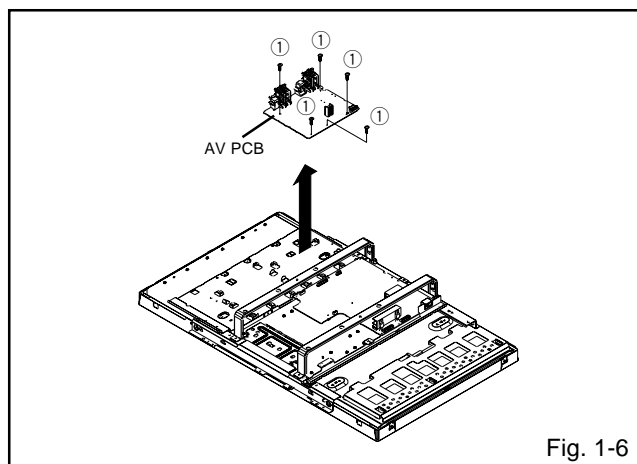


Fig. 1-6

1-7: ANGLE MAIN (Refer to Fig. 1-7)

1. Remove the 2 screws ①.
2. Remove the Angle Main.

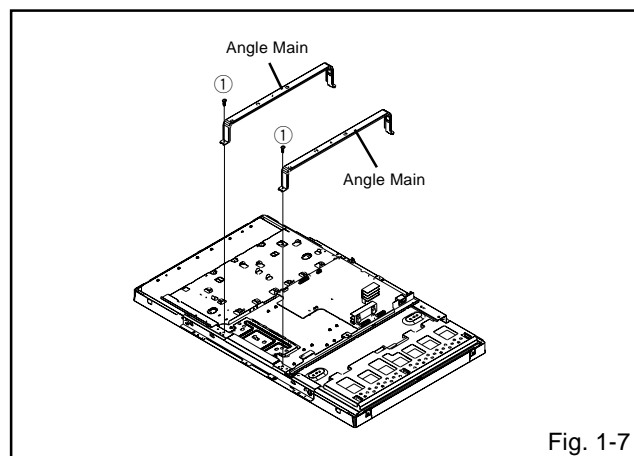


Fig. 1-7

1-8: POWER PCB (Refer to Fig. 1-8)

1. Disconnect the following connector:
(CP406).
2. Remove the 8 screws ①.
3. Remove the 2 screws ②.
4. Remove the Angle PCB-1 and Holder PCB.
5. Remove the POWER PCB and Angle PCB-3 in the direction of arrow.

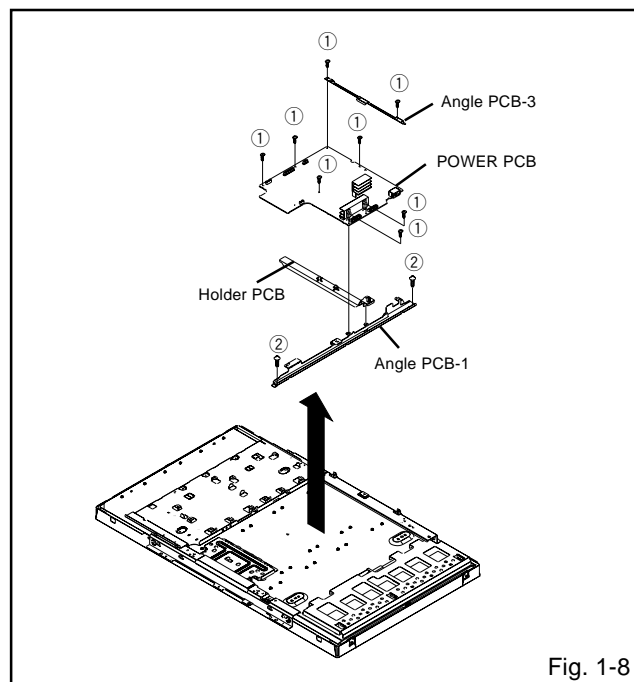


Fig. 1-8

DISASSEMBLY INSTRUCTIONS

1-9: ANGLE LCD TOP AND ANGLE LCD BOTTOM (Refer to Fig. 1-9)

1. Remove the 4 screws ①.
2. Remove the Angle PCB-2 and Holder Wire in the direction of arrow (A).
3. Remove the 2 screws ②.
4. Remove the Angle LCD Top and Holder Wire in the direction of arrow (B).
5. Remove the 4 screws ③.
6. Remove the Angle LCD Bottom and Holder Cord in the direction of arrow (C).

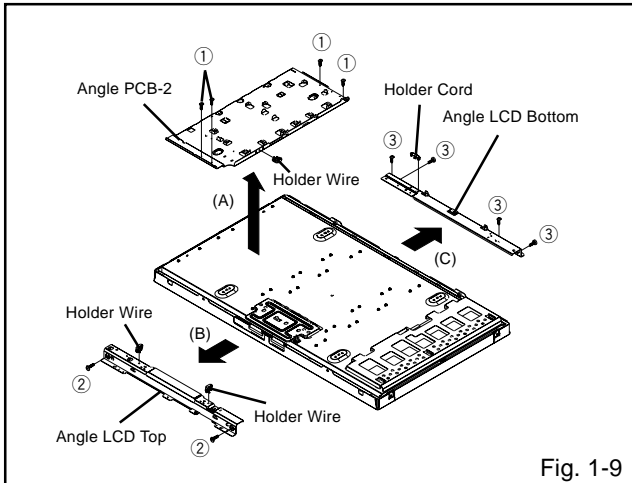


Fig. 1-9

DISASSEMBLY INSTRUCTIONS

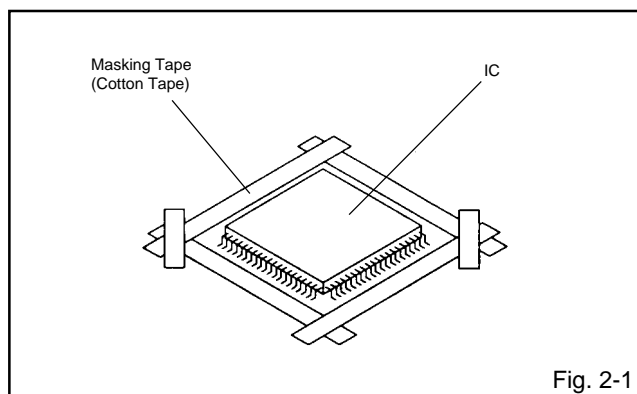
2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 2-1.)

NOTE

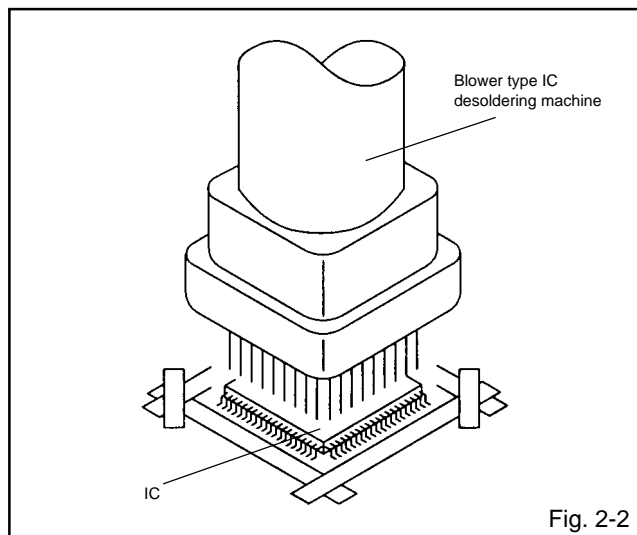
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 2-2.)

NOTE

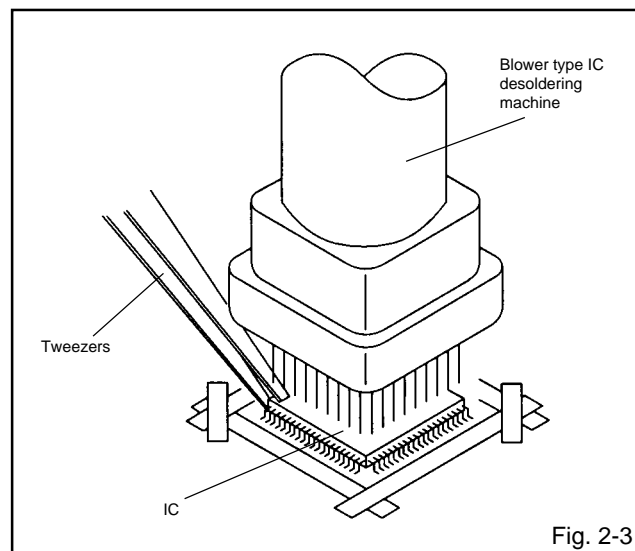
Do not rotate or move the IC back and forth, until IC can move back and forth easily after desoldering the leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 2-3.)

NOTE

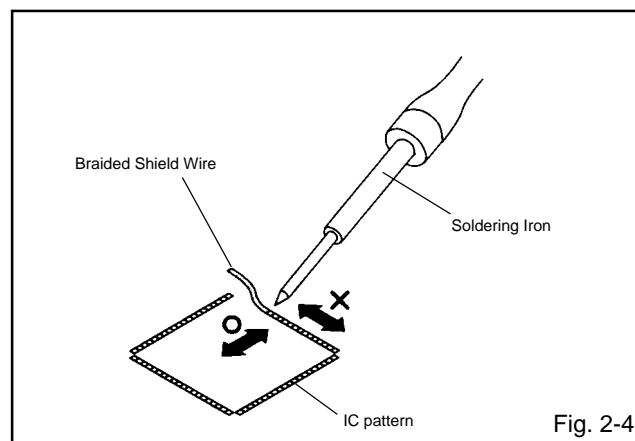
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 2-4.)

NOTE

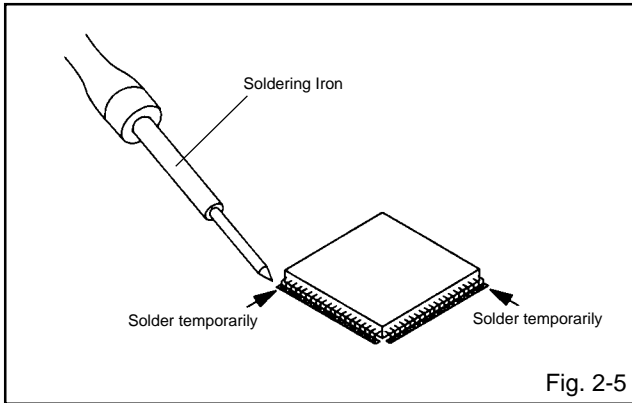
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



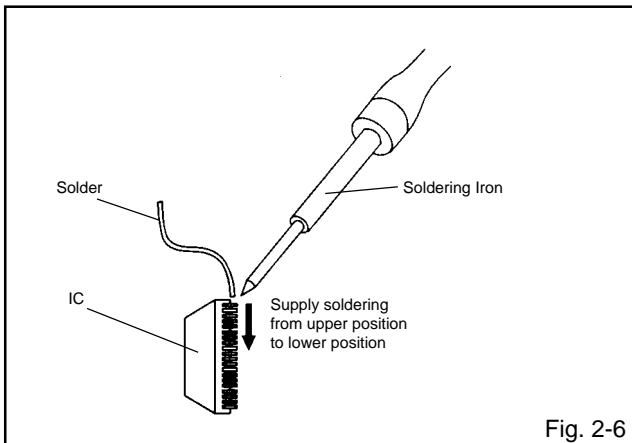
DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 2-5.)



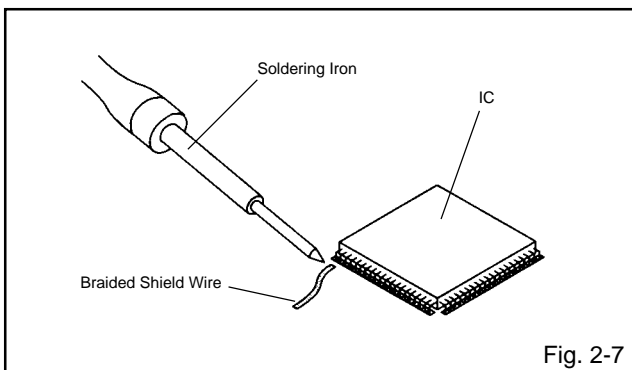
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 2-6.)



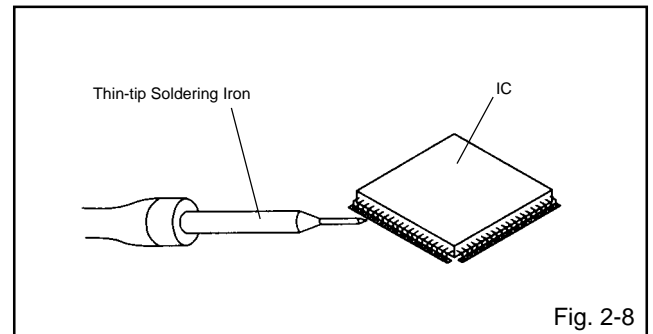
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 2-7.)

NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. (Refer to Fig. 2-8.)



5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

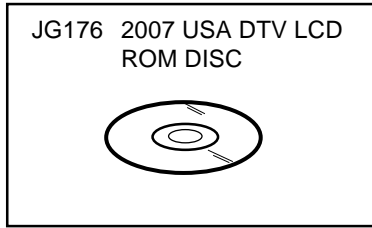
SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
POWER ON	VOL. DOWN (Minimum)	0	2 sec.	Releasing of V-CHIP PASSWORD.
POWER ON	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
POWER ON	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hours are displayed on the screen. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

SERVICING FIXTURES AND TOOLS



Ref. No.	Part No.	Parts Name	Remarks
JG176	APJG176126	2007 USA LCD DTV ROM DISC	Up-Date of the Firmware

RE-WRITE FOR DIGITAL SOFT FIRMWARE

1. Copy the "update.dat" in CD to USB Flash Memory.

Recommended USB Flash Memory

- SanDisk Cruzer Mini USB Flash Drive 128Mb
- SanDisk Cruzer Mini USB Flash Drive 256Mb
- SanDisk Cruzer Micoro USB Flash Drive 128Mb
- SanDisk Cruzer Micoro USB Flash Drive 256Mb
- TwinMos ModileDisk3 128Mb (USB 2.0)
- TwinMos ModileDisk3 256Mb (USB 2.0)

NOTE: After Format is done with FAT32 File system beforehand, USB Flash Memory is used.
The computer of WINDOWS2000 is used.

2. Confirm that the AC cord is plugged out.
3. Set the minus driver to the topside of the USB connector cover, remove the USB connector cover. Insert the USB Flash Memory to USB connector. (**Refer to Fig.1**)

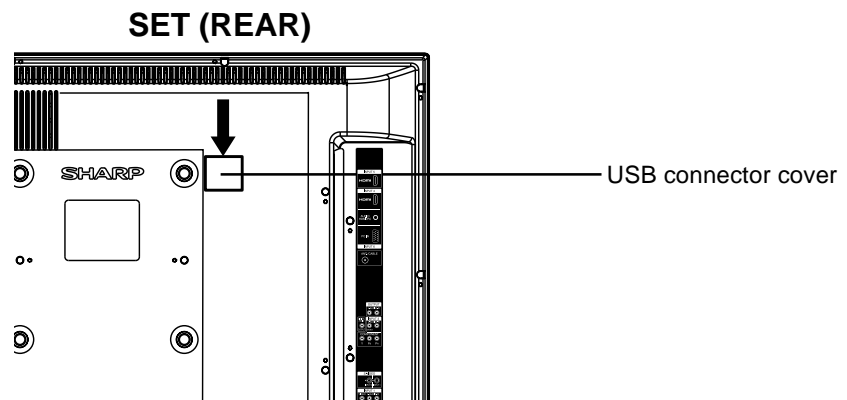


Fig.1

4. Insert the AC CORD of the set and turn on the power. The Up-Date will start automatically. During the writing, "PLEASE WAIT" will appear on the screen.
 5. After the Up-Date, the screen will return to normal screen.
 6. Turn off the power.
 7. Unplug the AC CORD, and remove the USB Flash Memory.
 8. Insert the AC CORD again.
- After the data input, set to the initializing of shipping.**
9. Turn on the power.
 10. Press both Channel button (1) on the remote control and the VOLUME DOWN button on the set for more than 2 seconds. The unit will now have the correct DATA for the new DIGITAL SOFT FIRMWARE.

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSION can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(8)** on the remote control for more than 2 seconds.
4. After the confirmation of CHECK SUM, MICON VERSION and POWER ON TOTAL HOURS, turn off the power.

NOTE: The each item value might be different according to each set.

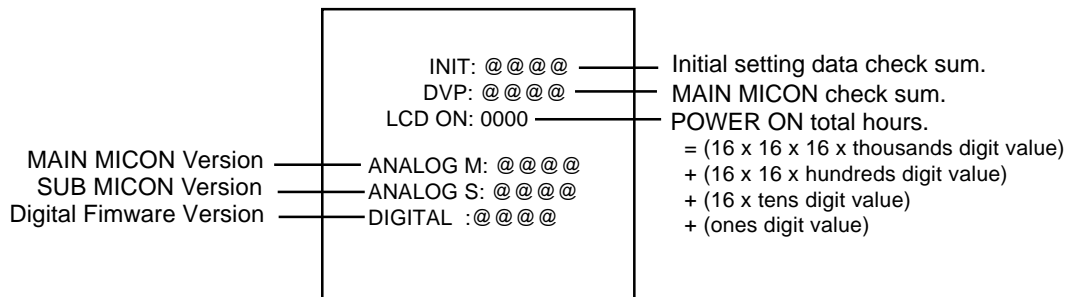


FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
ADDRESS and DATA should appear as FIG 2.

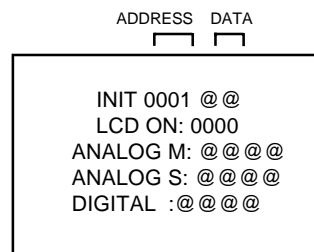


FIG. 2

4. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until Press RIGHT/LEFT button to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
6. Pressing RIGHT/LEFT button will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 4 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.
The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button (9) on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 1-1**.

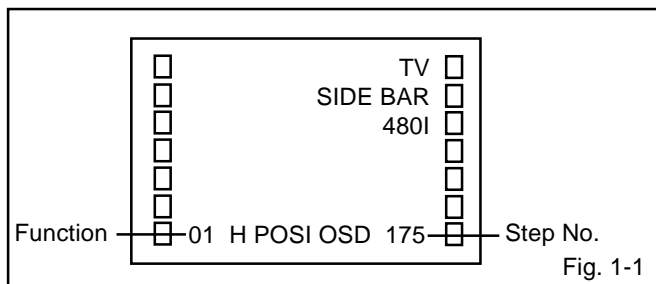


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button (0-9) on the remote control to select the options shown in **Fig. 1-2**.
4. Press the INPUT button on the remote control to end the adjustments.
5. To display the adjustment screen for TV, VIDEO1, VIDEO2, ColorStream HD, HDMI-O and PC mode, press the INPUT button on the remote control. Press the VOL.DOWN button on the set and the channel (9) on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
01	H POSI OSD	29	BAK LIGHT CENT
02	V POSI OSD	30	BAK LIGHT MAX
03	R DRIVE(N)	31	BAK LIGHT MIN
04	R CUT OFF(N)	32	BRIGHT CENT
05	G DRIVE(N)	33	BRIGHT MAX
06	G CUT OFF(N)	34	BRIGHT MIN
07	B DRIVE(N)	35	TINT
08	B CUT OFF(N)	36	SHARP CENT
09	R DRIVE(C)	37	SHARP MAX
10	R CUT OFF(C)	38	SHARP MIN
11	G DRIVE(C)	39	CONTRAST CENT
12	G CUT OFF(C)	40	CONTRAST MAX
13	B DRIVE(C)	41	CONTRAST MIN
14	B CUT OFF(C)	42	COLOR CENT
15	R DRIVE(W)	43	COLOR MAX
16	R CUT OFF(W)	44	COLOR MIN
17	G DRIVE(W)	47	CONTRAST 40
18	G CUT OFF(W)	49	Y BRIGHT
19	B DRIVE(W)	50	Y/Cb/Cr CONTRAST
20	B CUT OFF(W)		
21	H POSI CENTER		
24	V POSI CENTER		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONTRAST MAX

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (40) on the remote control to select "CONTRAST MAX".
4. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "150"
5. Check if the picture is normal.
6. Receive the monoscope pattern. (VIDEO Input)
7. Press the INPUT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness and contrast to normal position.
9. Activate the adjustment mode display of **Fig. 2-1** and press the channel button (40) on the remote control to select "CONTRAST MAX".
10. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "150".
11. Check if the picture is normal.
12. Playback the DVD(480i) disc. (COMPONENT Input)
13. Press the INPUT button on the remote control to set to the COLOR STREAM HD mode.
14. Using the remote control, set the brightness and contrast to normal position.
15. Activate the adjustment mode display of **Fig. 2-1** and press the channel button (40) on the remote control to select "CONTRAST MAX".
16. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "154".
17. Playback the DVD(480i) disc. (HDMI Input)
18. Press the INPUT button on the remote control to set to the HDMI mode.
19. Using the remote control, set the brightness and contrast to normal position.
20. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (40) on the remote control to select "CONTRAST MAX".
21. Press the LEFT/RIGTH button on the remote control until the contrast step No. becomes "139".
22. Check if the picture is normal.

ELECTRICAL ADJUSTMENTS

2-2: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the INPUT button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE(N)".
6. Press the CH. UP/DOWN button on the remote control to select the "R CUT OFF(N)", "B DRIVE(N)", "B CUT OFF(N)", "R DRIVE(C)", "R CUT OFF(C)", "B DRIVE(C)", "B CUT OFF(C)", "R DRIVE(W)", "R CUT OFF(W)", "B DRIVE(W)" or "B CUT OFF(W)".
7. Adjust the LEFT/RIGHT button on the remote control to whiten the R CUT OFF(N), B DRIVE(N), B CUT OFF(N), R DRIVE(C), R CUT OFF(C), B DRIVE(C), B CUT OFF(C), R DRIVE(W), R CUT OFF(W), B DRIVE(W) or B CUT OFF(W) at each step tone sections equally.
8. Perform the above adjustments 5 and 6 until the white achieved.

2-3: BRIGHT CENT

1. Receive the monoscope pattern. (VIDEO Input)
2. Press the INPUT button on the remote control to set to the AV mode.
3. Set the screen mode to FULL.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(49)** on the remote control to select "Y BRIGHT".
6. Press the LEFT/RIGHT button on the remote control until the screen begin to shine.
7. Receive the monoscope pattern. (RF Input)
8. Press the INPUT button on the remote control to set to the ANT mode. Then perform the the above adjustments 4~6.
9. Playback the DVD(480i) disc. (COMPONENT Input)
10. Press the INPUT button on the remote control to set to the COLOR STREAM HD mode. Then perform the the above adjustments 4~6.
11. Playback the DVD(480i) disc. (HDMI Input)
12. Press the INPUT button on the remote control to set to the HDMI mode. Then perform the the above adjustments 4~6.

2-4: CONTRAST MAX

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(40)** on the remote control to select "CONTRAST MAX".
4. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "144"
5. Check if the picture is normal.
6. Receive the monoscope pattern. (VIDEO Input)
7. Press the INPUT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness and contrast to normal position.
9. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(40)** on the remote control to select "CONTRAST MAX".
10. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "143".
11. Check if the picture is normal.
12. Playback the DVD(480i) disc. (COMPONENT Input)
13. Press the INPUT button on the remote control to set to the COLOR STREAM HD mode.
14. Using the remote control, set the brightness and contrast to normal position.
15. Activate the adjustment mode display of **Fig. 2-1** and press the channel button **(40)** on the remote control to select "CONTRAST MAX".
16. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "147".
17. Playback the DVD(480i) disc. (HDMI Input)
18. Press the INPUT button on the remote control to set to the HDMI mode.
19. Using the remote control, set the brightness and contrast to normal position.
20. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(40)** on the remote control to select "CONTRAST MAX".
21. Press the LEFT/RIGHT button on the remote control until the contrast step No. becomes "132".
22. Check if the picture is normal.

ELECTRICAL ADJUSTMENTS

2-5: Confirmation of Fixed Value (Step No.)

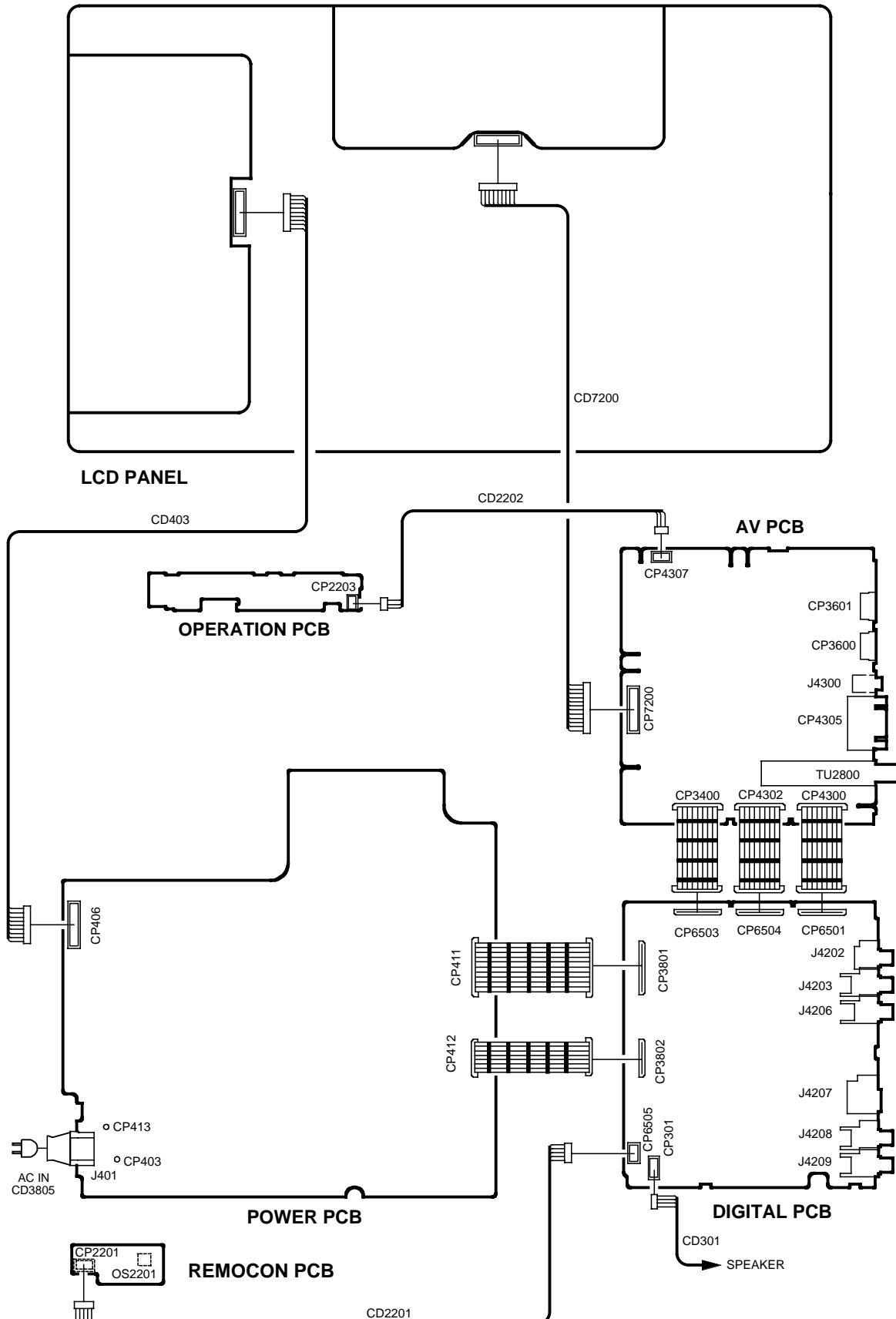
Please check if the fixed values of each of the adjustment items are set correctly referring below. **(TUNER/AV/YUV/HDMI/DIGITAL/PC)**

[illegible]

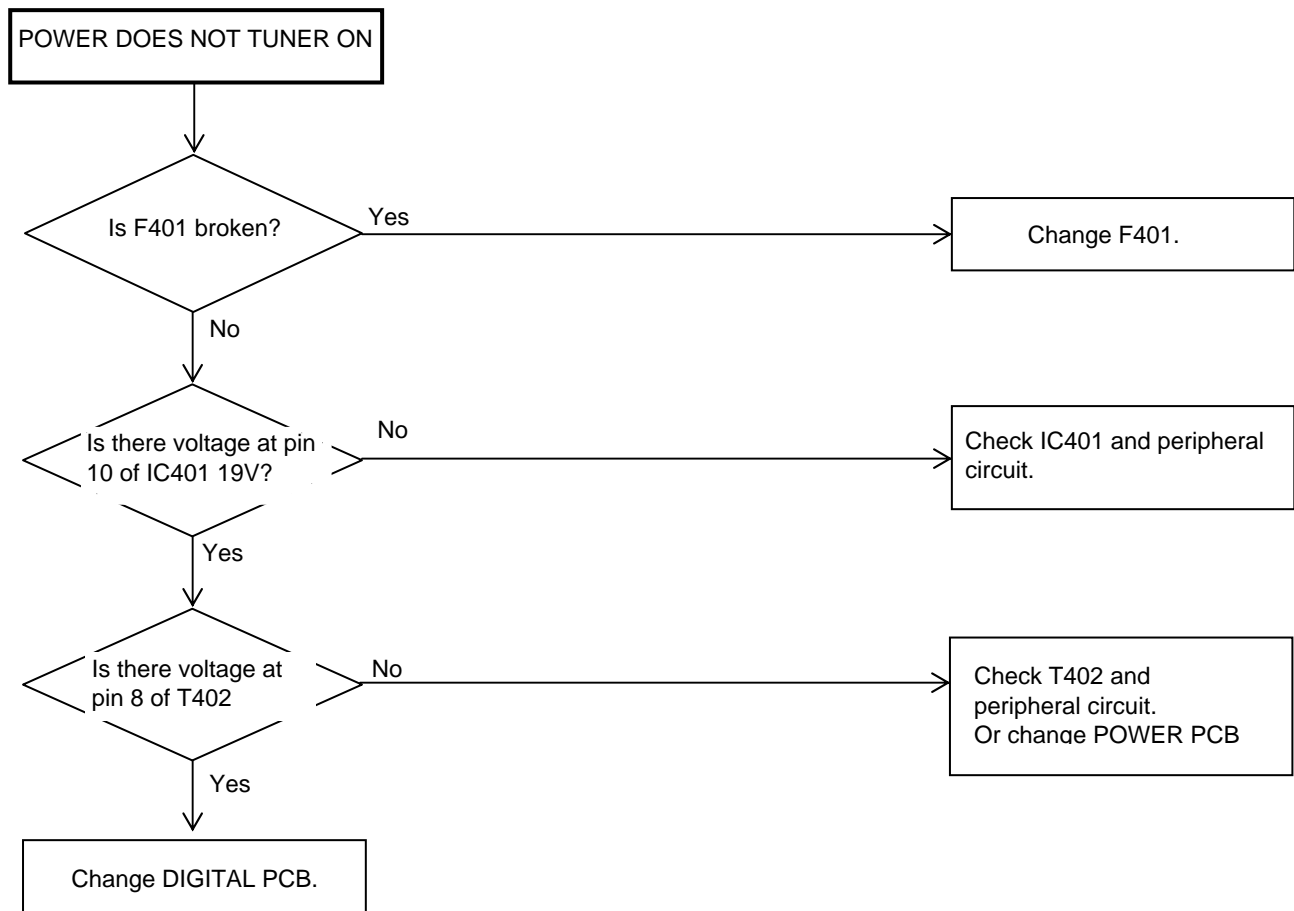
NO.	調整項目	DIGITAL TUNER												PC														
		480i				480p				720p		1080i		VGA(640*480)		VGA(720*400)		WVGA(848*480)		SVGA(800*600)		XGA(1024*768)		WXGA(1280*720)	WXGA(1280*768)	WXGA(1360*768)		
		SIDE BAR	S.STRETCH	ZOOM	STRETCH	SIDE BAR	S.STRETCH	ZOOM	STRETCH	ZOOM	STRETCH	ZOOM	STRETCH	SIDE BAR	STRETCH	SIDE BAR	STRETCH	STRETCH	SIDE BAR	STRETCH	SIDE BAR	STRETCH	STRETCH	STRETCH	STRETCH	STRETCH	STRETCH	STRETCH
1	H POSI OSD	350				350				350		350		350		350												
2	V POSI OSD	88				88				88		88		88														
3	R.DRIVE (N)	139				139				139		139		128														
4	R CUTOFF (N)	126				126				126		126		---		---		---		---		---		---		---		---
5	G.DRIVE (N)	128				128				128		128		128														
6	G CUTOFF (N)	128				128				128		128		---		---		---		---		---		---		---		---
7	B.DRIVE (N)	123				123				123		123		128														
8	B CUTOFF (N)	130				130				130		130		---		---		---		---		---		---		---		---
9	R.DRIVE (C)	136				136				136		136		---		---		---		---		---		---		---		---
10	R CUTOFF (C)	126				126				126		126		---		---		---		---		---		---		---		---
11	G.DRIVE (C)	128				128				128		128		---		---		---		---		---		---		---		---
12	G CUTOFF (C)	128				128				128		128		---		---		---		---		---		---		---		---
13	B.DRIVE (C)	141				141				141		141		---		---		---		---		---		---		---		---
14	B CUTOFF (C)	128				128				128		128		---		---		---		---		---		---		---		---
15	R.DRIVE (W)	155				155				155		155		---		---		---		---		---		---		---		---
16	R CUTOFF (W)	124				124				124		124		---		---		---		---		---		---		---		---
17	G.DRIVE (W)	128				128				128		128		---		---		---		---		---		---		---		---
18	G CUTOFF (W)	128				128				128		128		---		---		---		---		---		---		---		---
19	B.DRIVE (W)	102				102				102		102		---		---		---		---		---		---		---		---
20	B CUTOFF (W)	130				130				130		130		---		---		---		---		---		---		---		---
21	H POSI CENTER	230	230	230	230	230	230	230	230	230	230	230	230	289	289	211	288	341	223	223	371	371	284	328	374			
22	H POSI MAX	---	---	---	---	---	---	---	---	---	---	---	---	314	314	236	313	366	248	248	396	396	364	353	399			
23	H POSI MIN	---	---	---	---	---	---	---	---	---	---	---	---	264	264	186	263	316	198	198	346	346	204	303	349			
24	V POSI CENTER	32	32	32	32	32	32	32	32	32	32	32	32	35	35	37	37	31	27	27	35	35	25	27	24			
25	V POSI MAX	---	---	---	---	---	---	---	---	---	---	---	---	60	60	62	62	56	47	47	60	60	45	47	44			
26	V POSI MIN	---	---	---	---	---	---	---	---	---	---	---	---	10	10	12	12	6	7	7	10	10	5	7	4			
27	BAK LIGHT CENT	128				128				128		128		---		---		---		---		---		---		---		---
28	BAK LIGHT MAX	255				255				255		255		---		---		---		---		---		---		---		---
29	BAK LIGHT MIN	0				0				0		0		---		---		---		---		---		---		---		---
30	BRIGHT CENT	128				128				128		128		---		---		---		---		---		---		---		---
31	BRIGHT MAX	160				160				160		160		170		---		---		---		---		---		---		---
32	BRIGHT MIN	70				70				70		70		60		---		---		---		---		---		---		---
33	TINT	128				128				128		128		---		---		---		---		---		---		---		---
34	SHARP V1 MAX	511				511				511		511		511		511												
35	SHARP H1 MAX	511				511				511		511		511		511												
36	SHARP H2 MAX	511				511				511		511		511		511												
37	CONT CENTER	102				102				102		102		95		102		102		102		102		102		102		102
38	CONT MAX	147				147				147		147		127		147		127		127		127		127		127		127
39	CONT MIN	50				50				50		50		60		60												
40	COLOR CENT	129				129				129		129		---		---		---		---		---		---		---		---
41	COLOR MAX	210				210				210		210		---		---		---		---		---		---		---		---
42	COLOR MIN	64				64				64		64		---		---		---		---		---		---		---		---
43	CONT 40	136				136				136		136		121		121												
44	Y BRIGHT	469				469				469		469		512		512												
45	Y/Cb/Cr CONTRAST	128				128				128		128		128		128												
46	ADC OFFSET	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
47	(PGASELP1)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
48	(PGASELP2)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
49	(PGASELP3)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
50	(ACH_OFF_VAL_Y)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
51	(ACH_OFF_VAL_CB)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
52	(ACH_OFF_VAL_CR)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	

ELECTRICAL ADJUSTMENTS

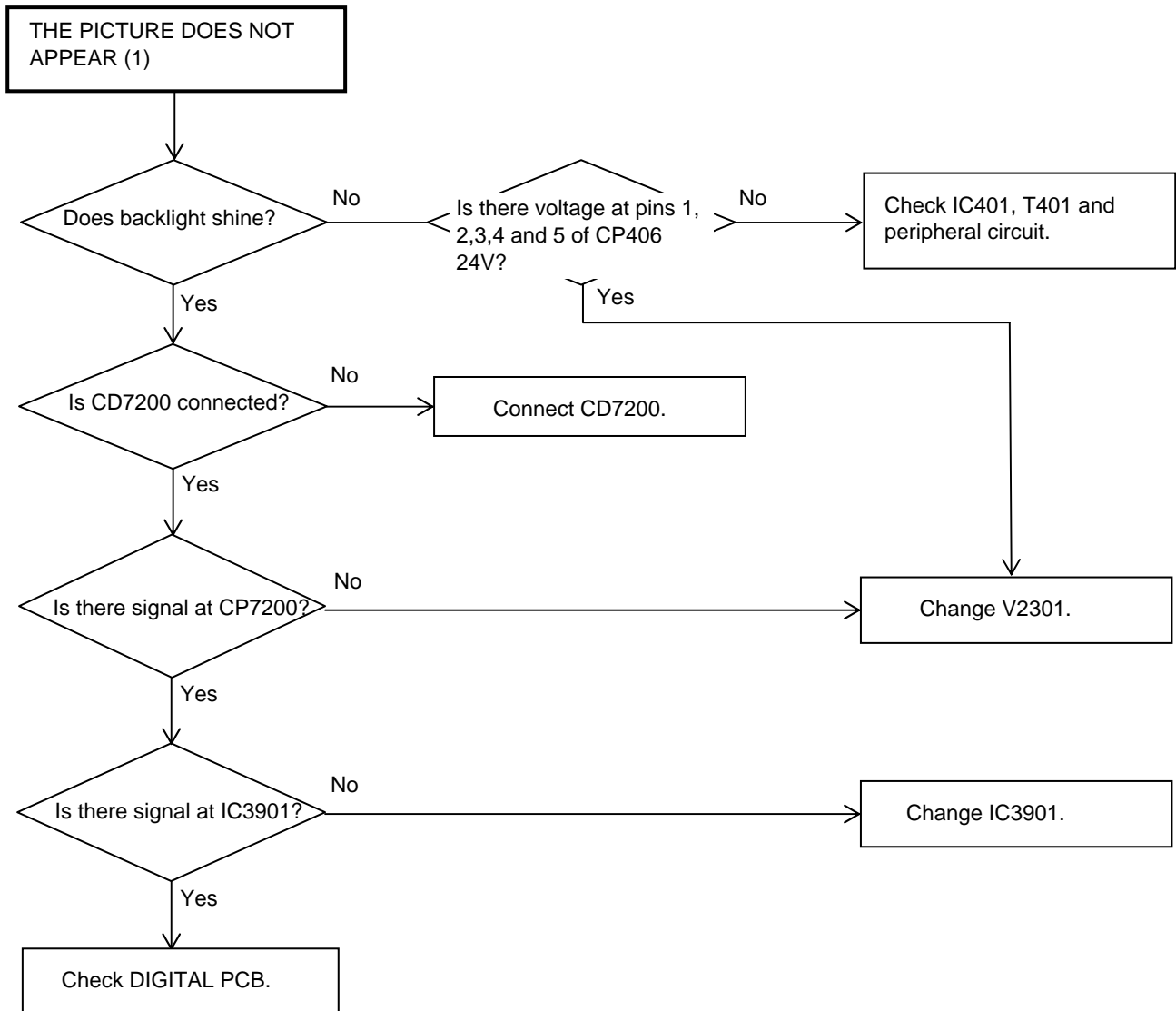
3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



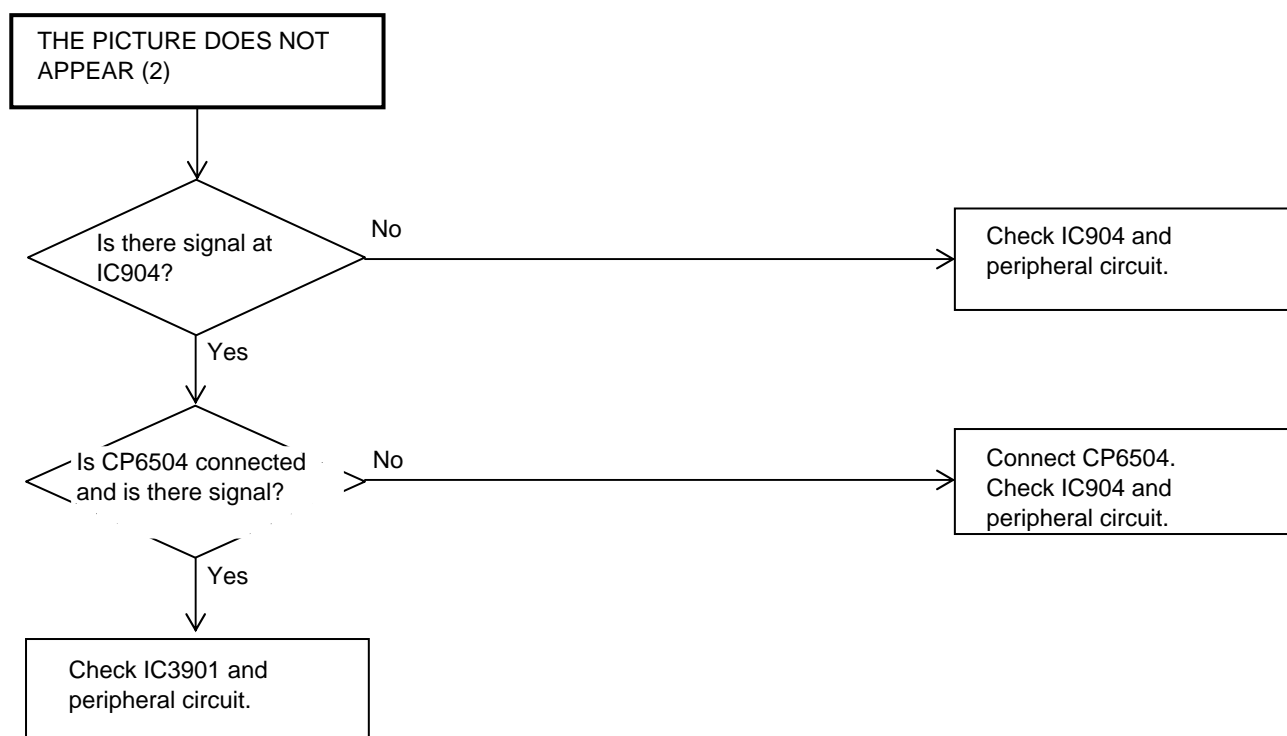
TROUBLESHOOTING GUIDE



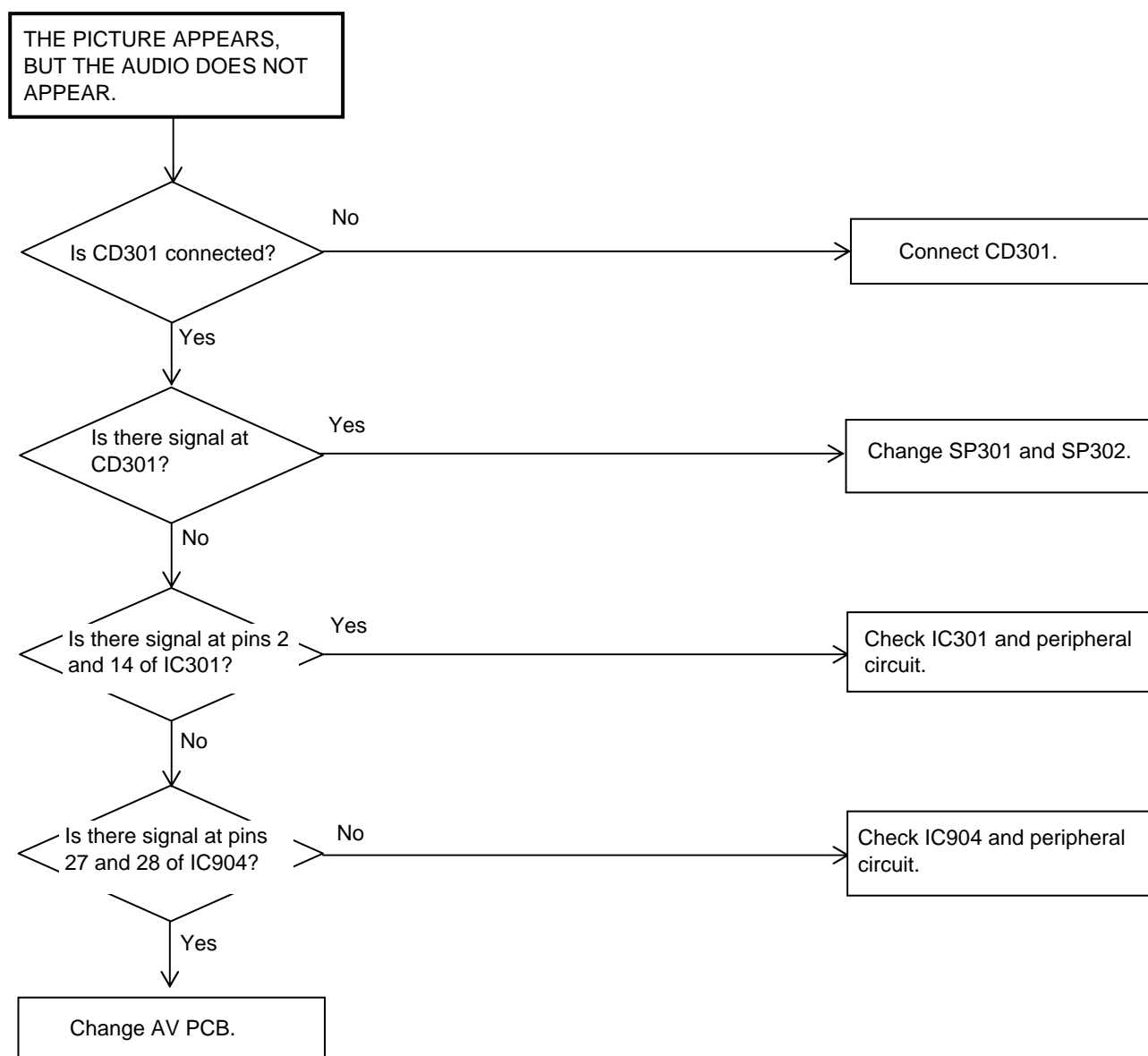
TROUBLESHOOTING GUIDE



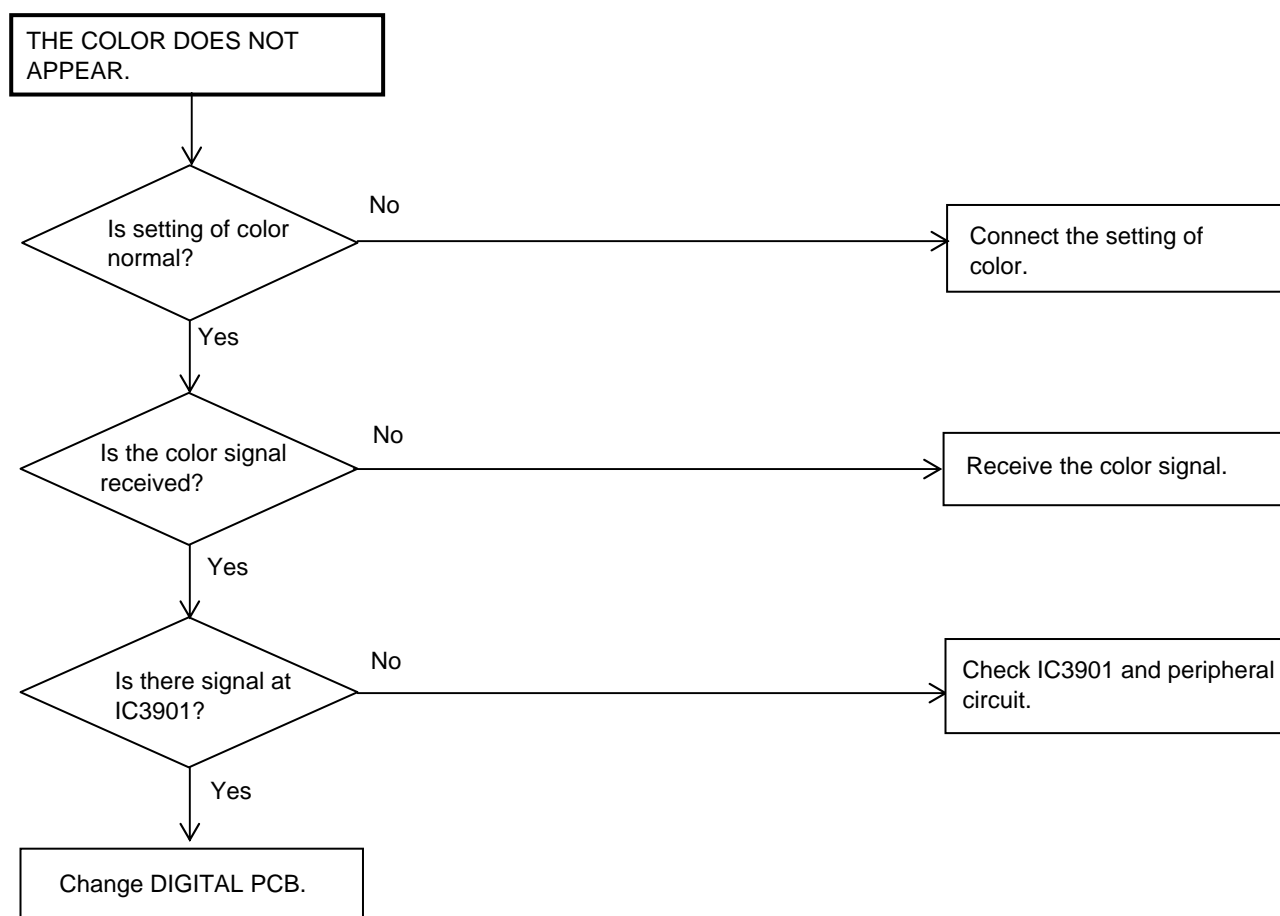
TROUBLESHOOTING GUIDE



TROUBLESHOOTING GUIDE



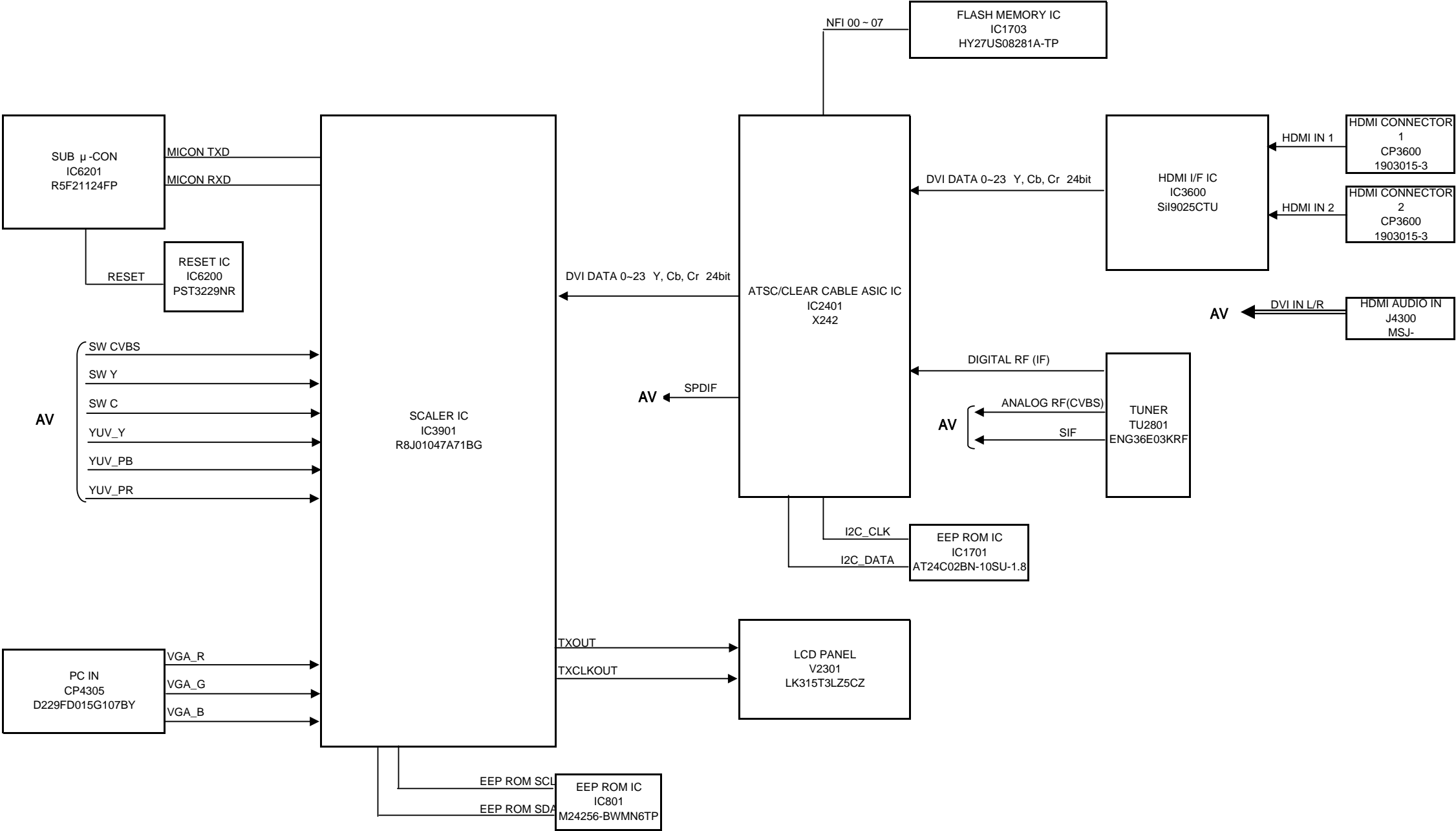
TROUBLESHOOTING GUIDE



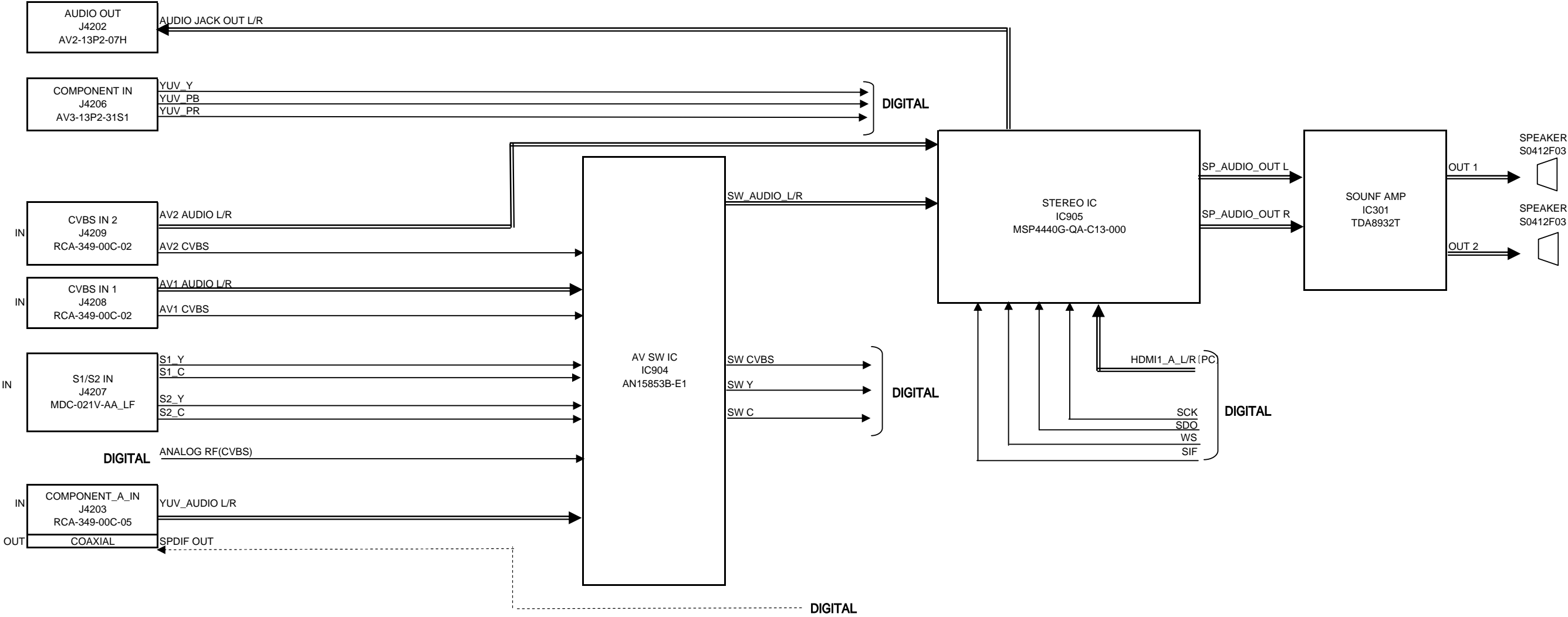
TROUBLESHOOTING GUIDDE



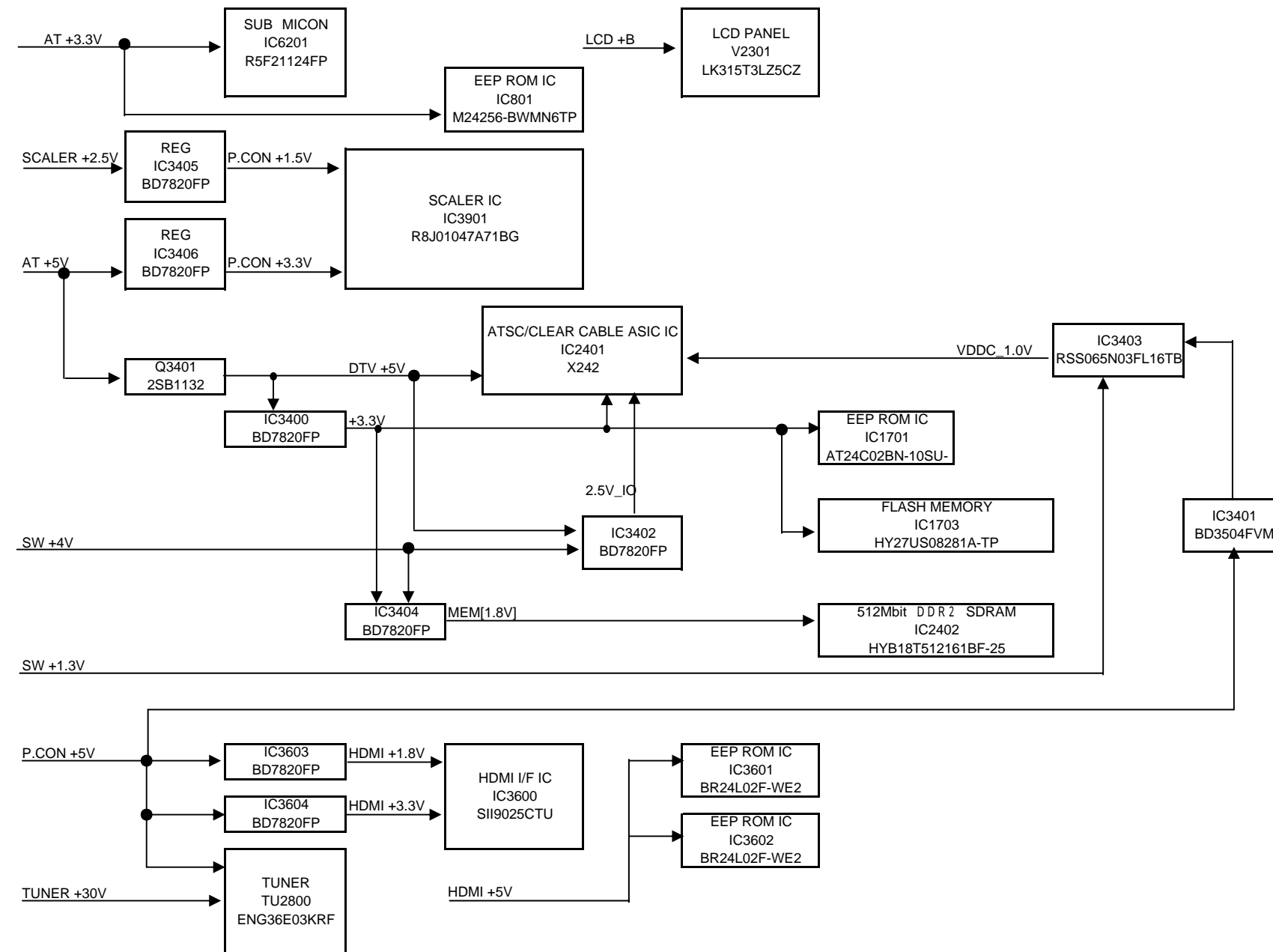
SIGNAL(DIGITAL PCB) BLOCK DIAGRAM



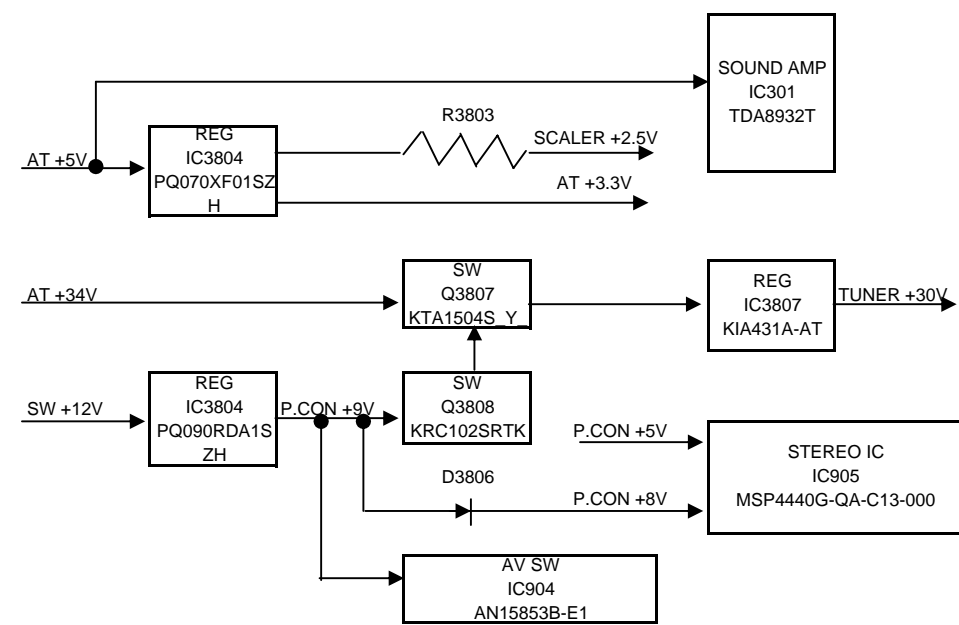
SIGNAL(AV PCB) BLOCK DIAGRAM



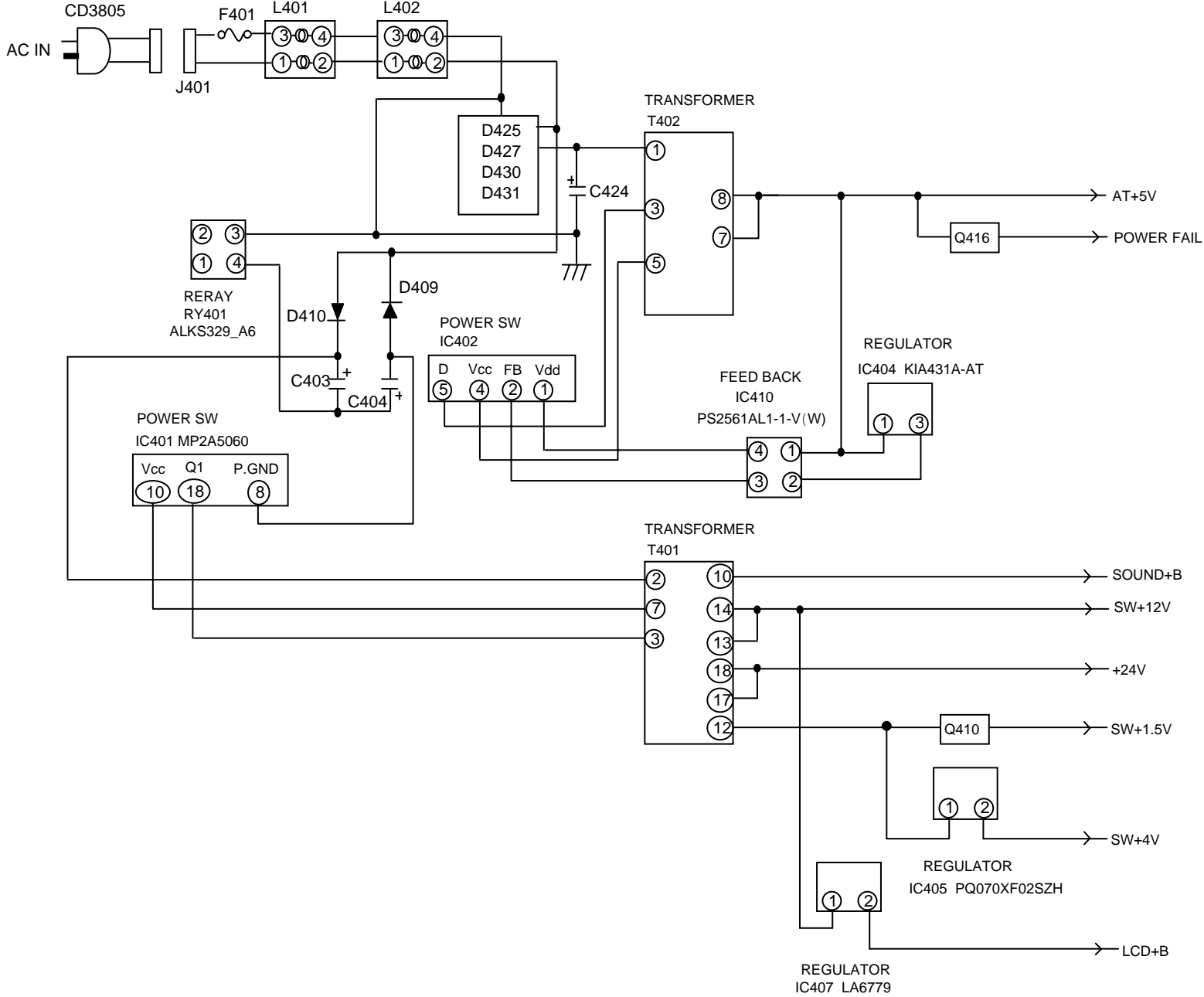
POWER(DIGITAL PCB) BLOCK DIAGRAM



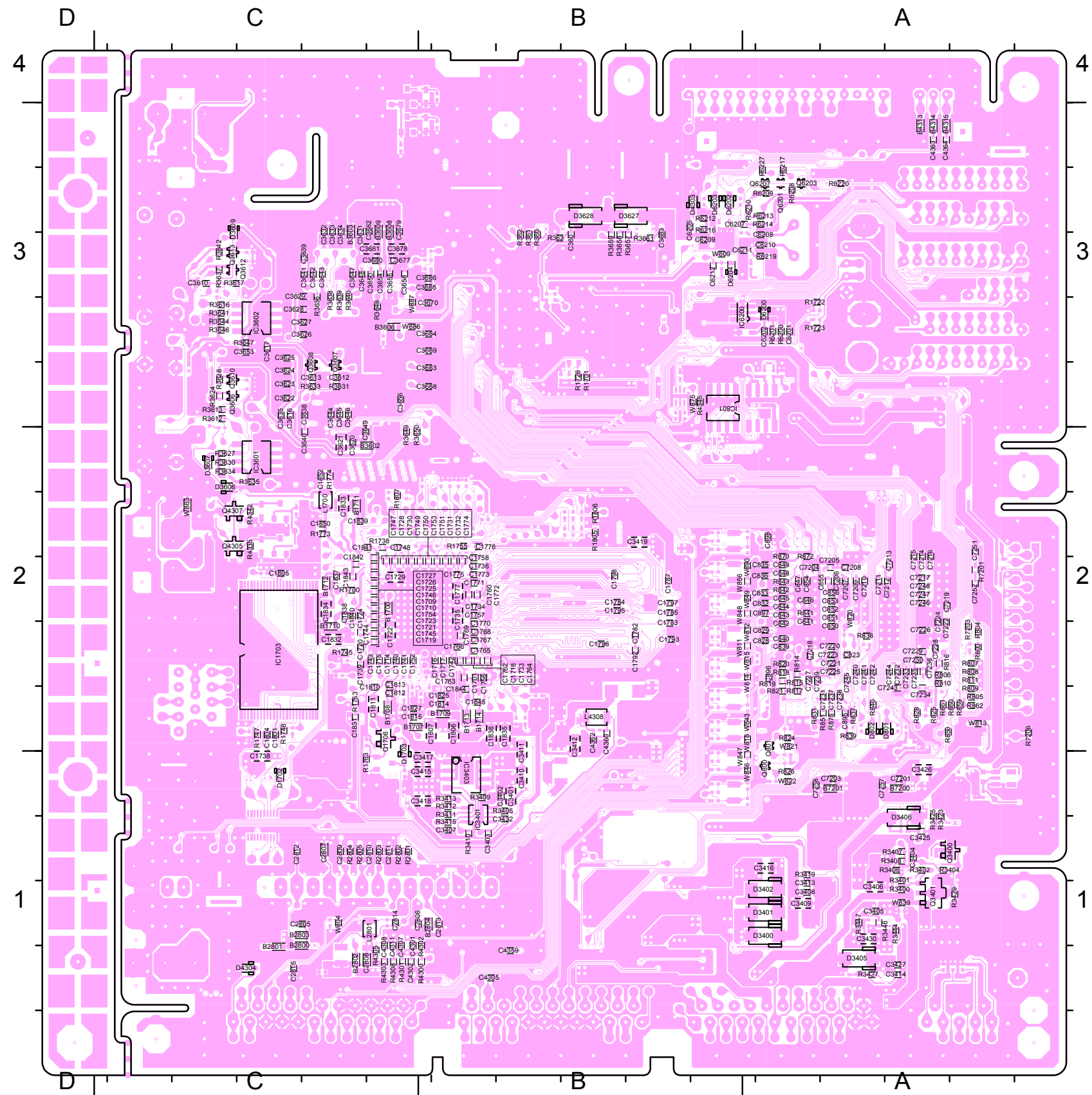
POWER(AV PCB) BLOCK DIAGRAM



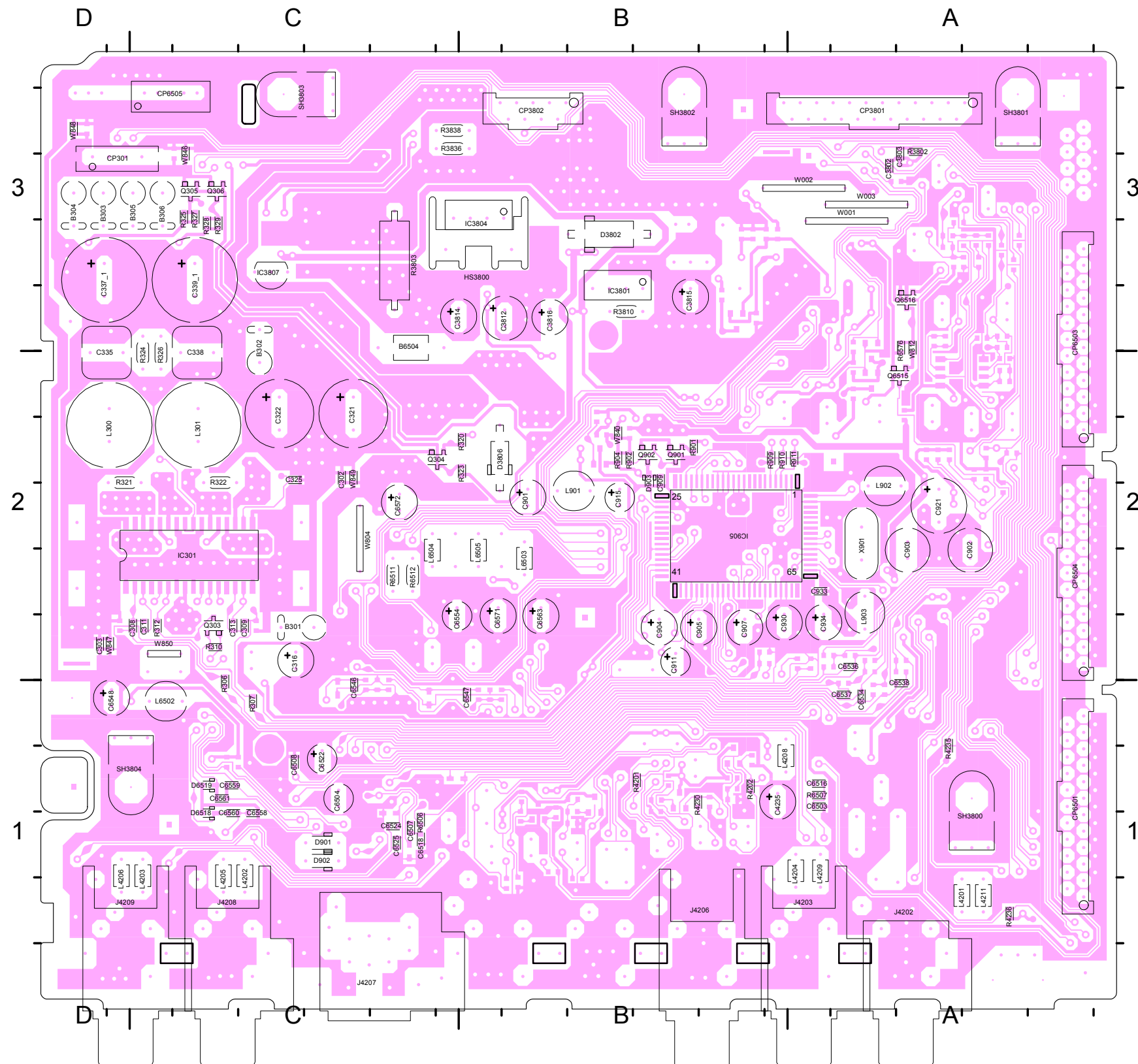
POWER BLOCK DIAGRAM



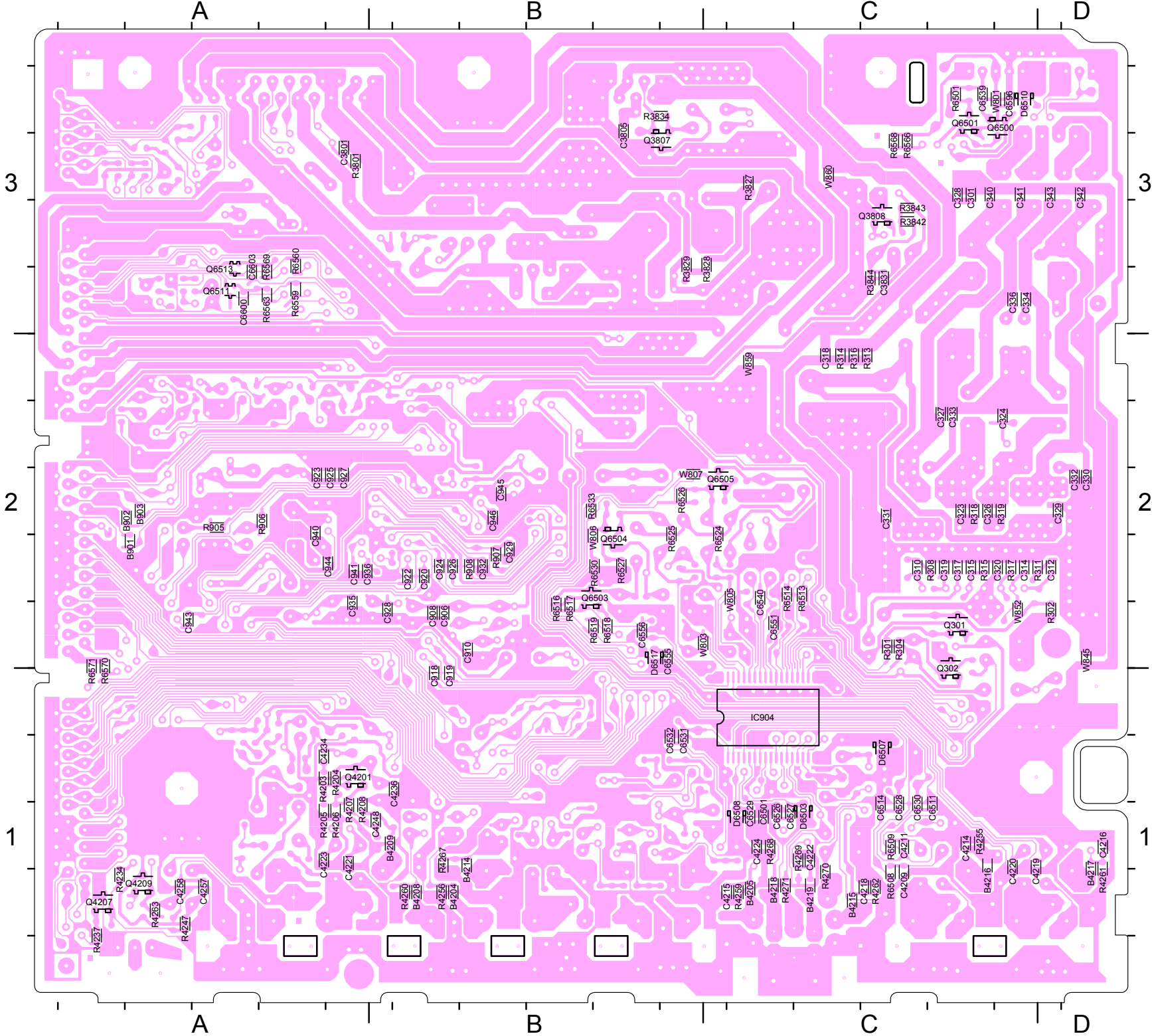
PRINTED CIRCUIT BOARD
DIGITAL (BOTTOM SIDE)



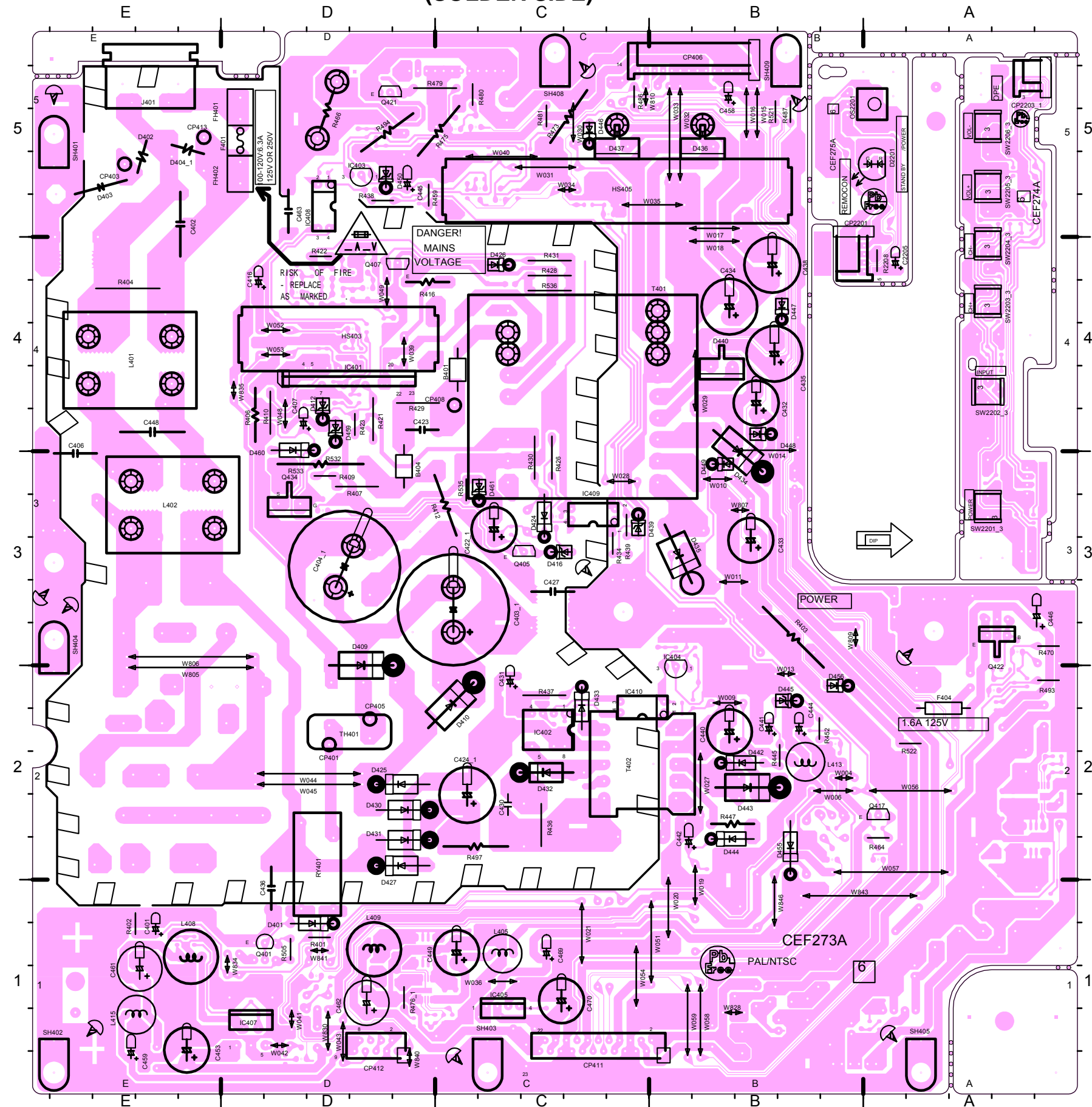
PRINTED CIRCUIT BOARDS AV (TOP SIDE)



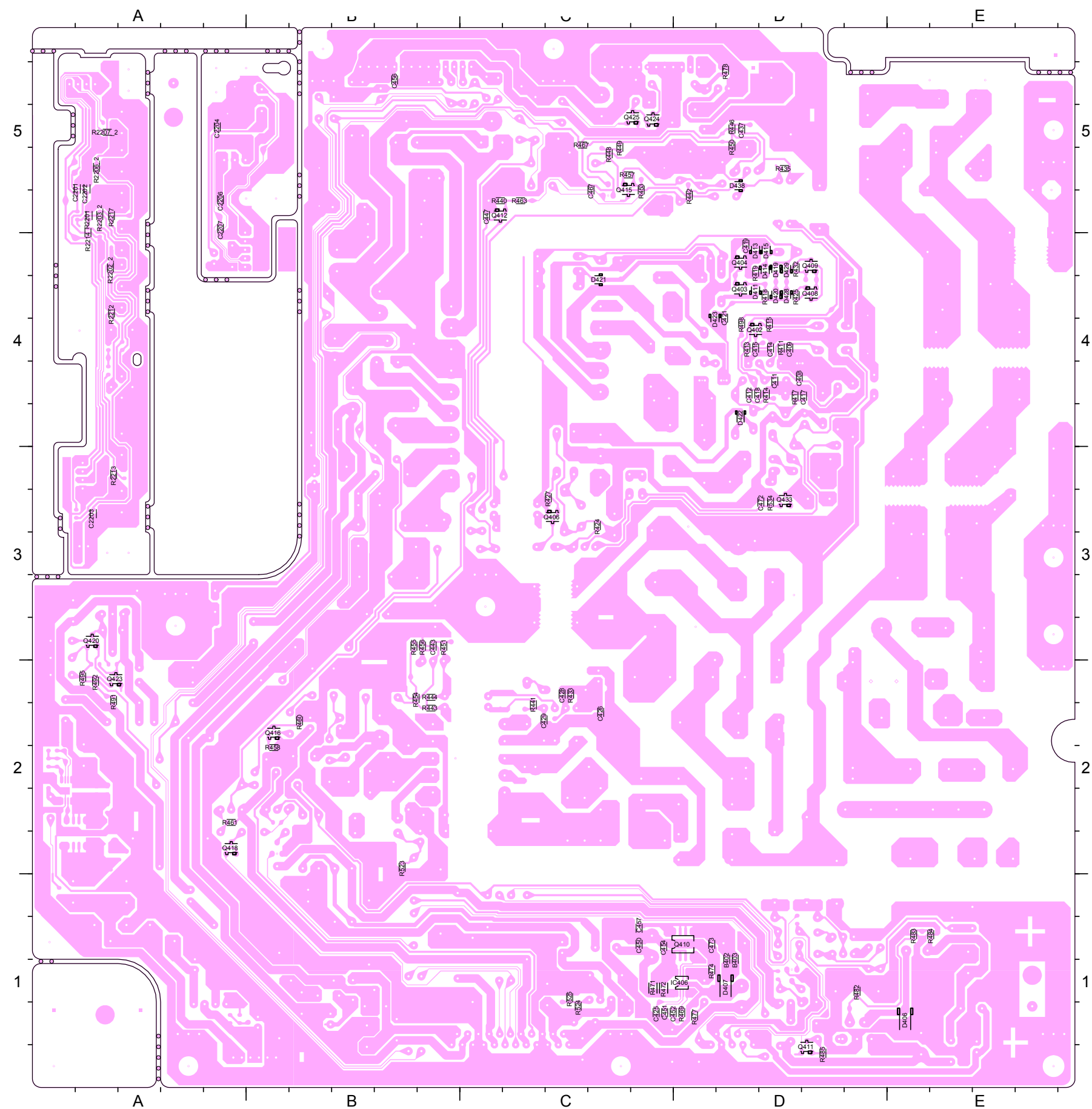
PRINTED CIRCUIT BOARDS
AV (BOTTOM SIDE)



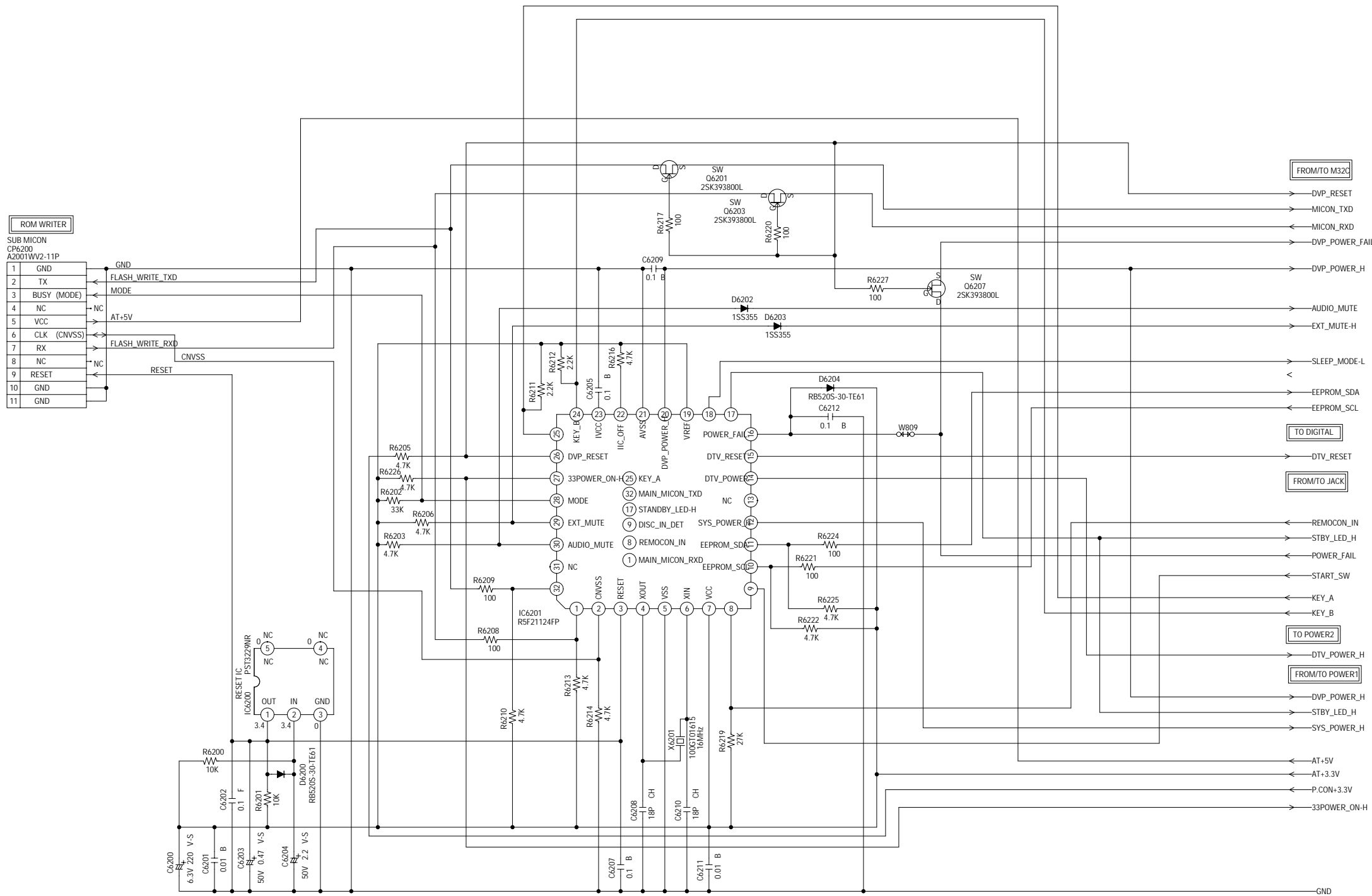
**PRINTED CIRCUIT BOARDS
POWER/OPERATION/REMOCON (INSERTED PARTS)
(SOLDER SIDE)**



**PRINTED CIRCUIT BOARDS
POWER/OPERATION/REMOCON (CHIP MOUNTED PARTS)
(SOLDER SIDE)**



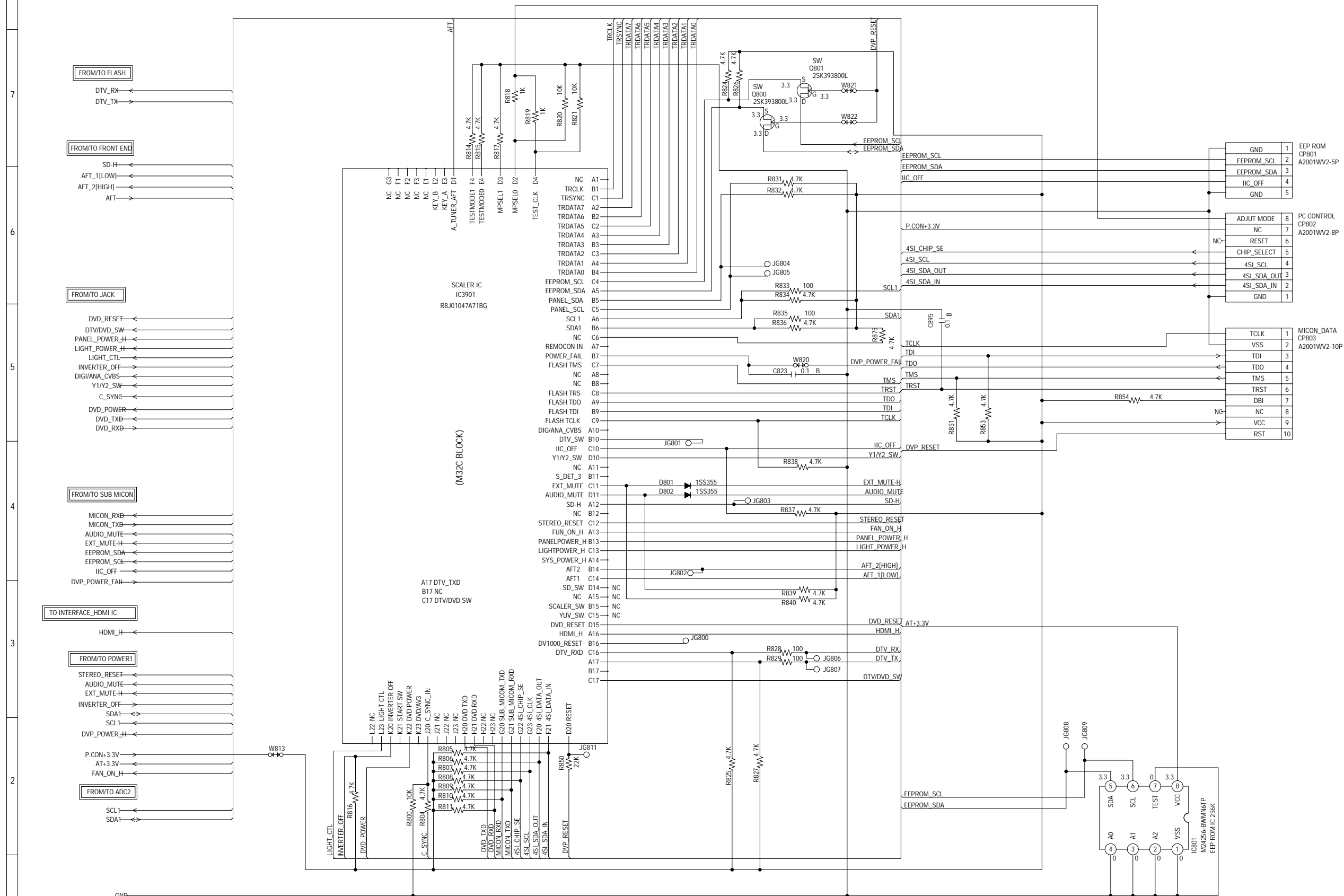
SCALER SCHEMATIC DIAGRAM
(MICON IN BLOCK)
(DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.


NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.


SCALER SCHEMATIC DIAGRAM



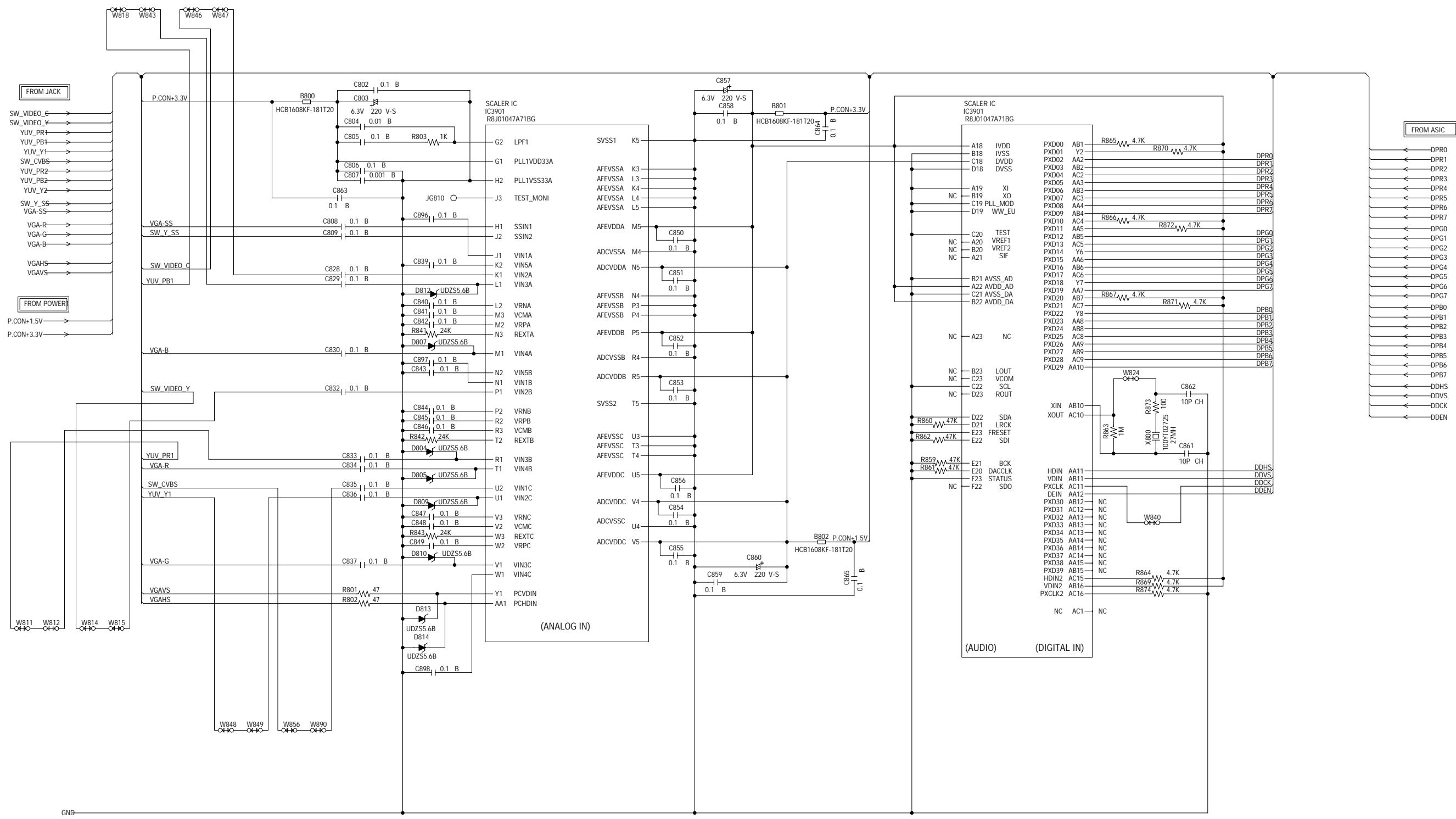
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIÈCES RÉPARÉES PAR UN  ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY .

SCALER SCHEMATIC DIAGRAM
(ANALOG BLOCK/DIGITAL IN BLOCK)
(DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

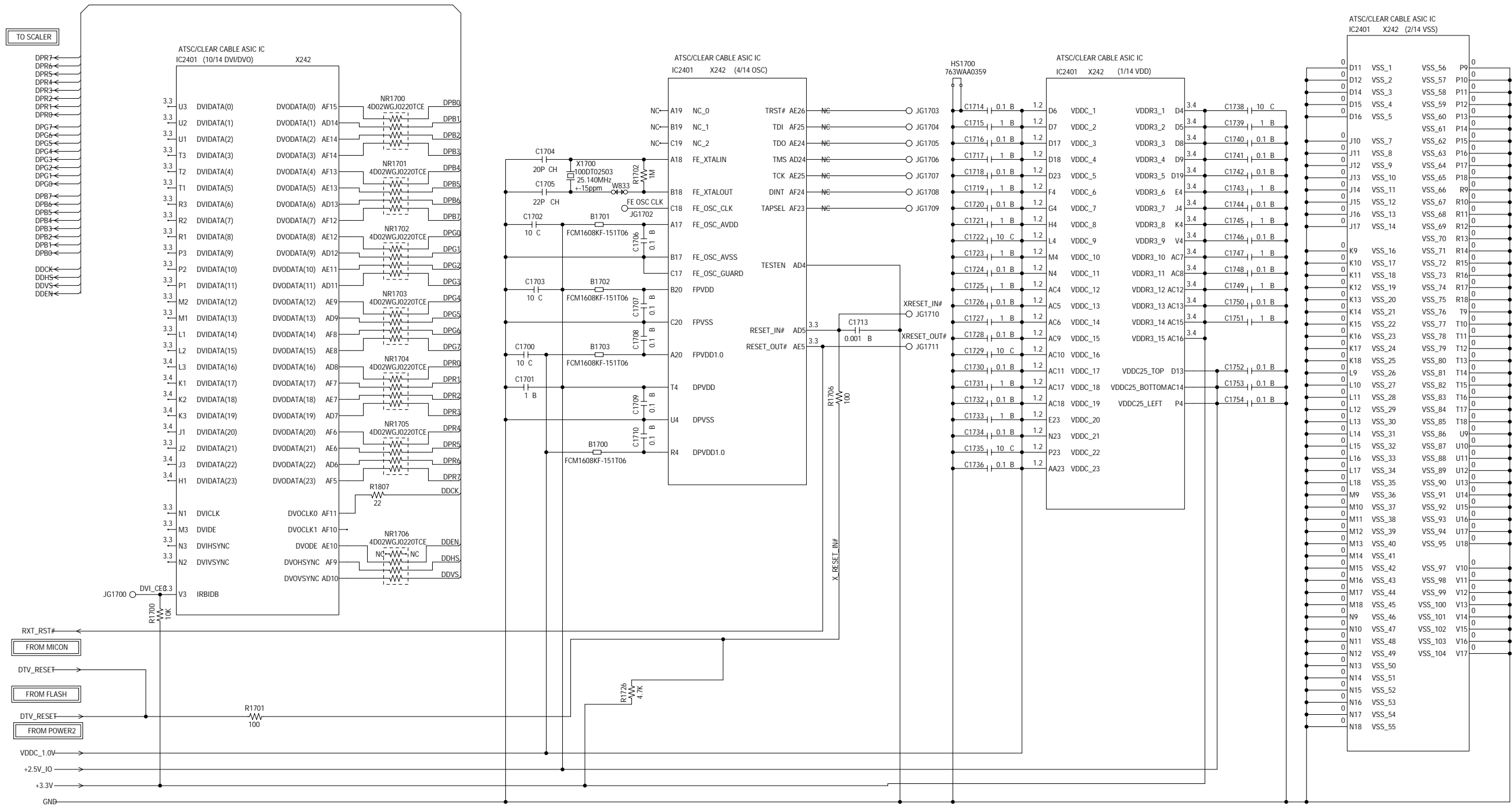
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

PCBDH0
CEF272

ASIC SCHEMATIC DIAGRAM
(DIGITAL PCB)

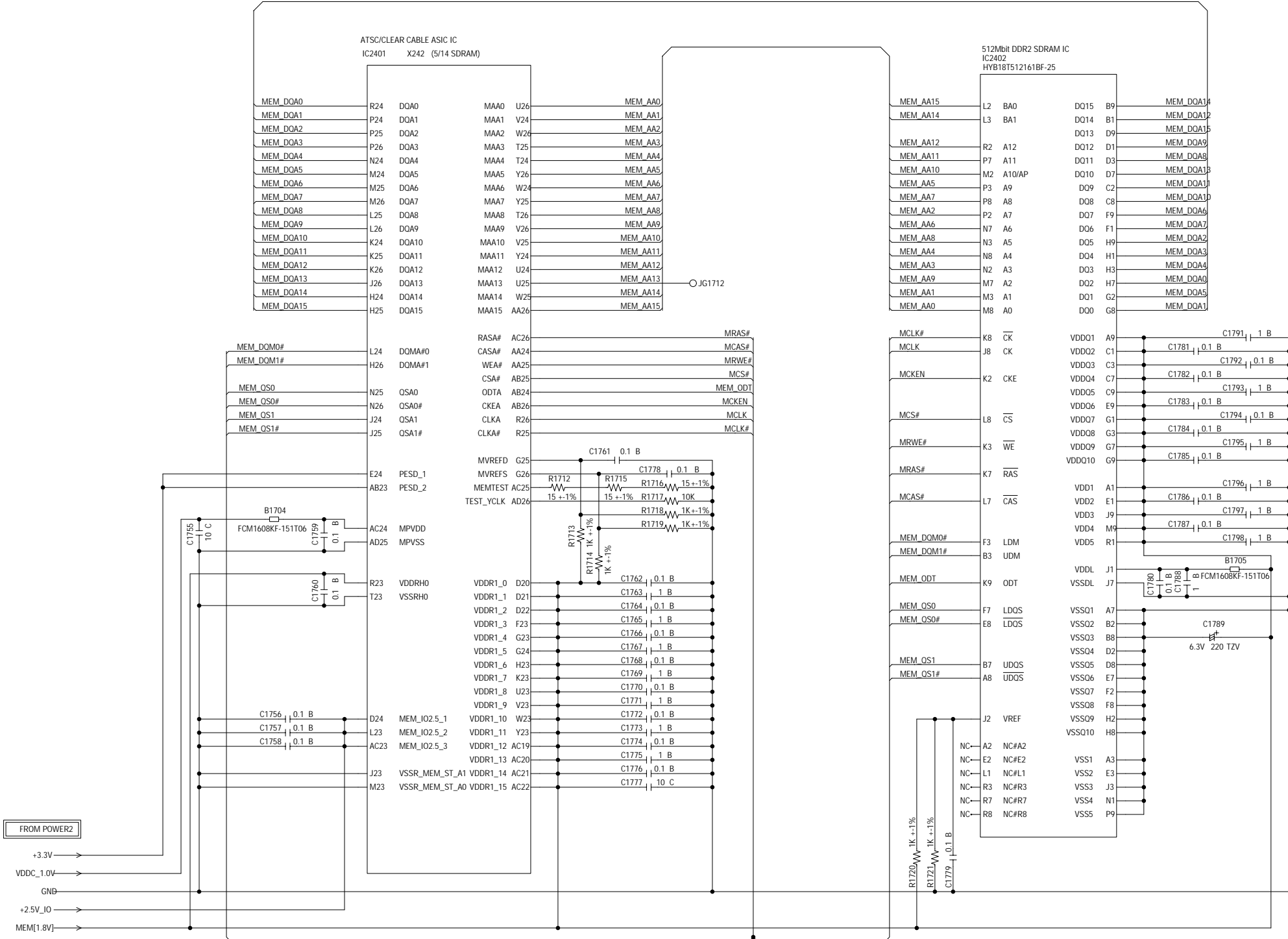


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEF272

SDRAM SCHEMATIC DIAGRAM (DIGITAL PCB)

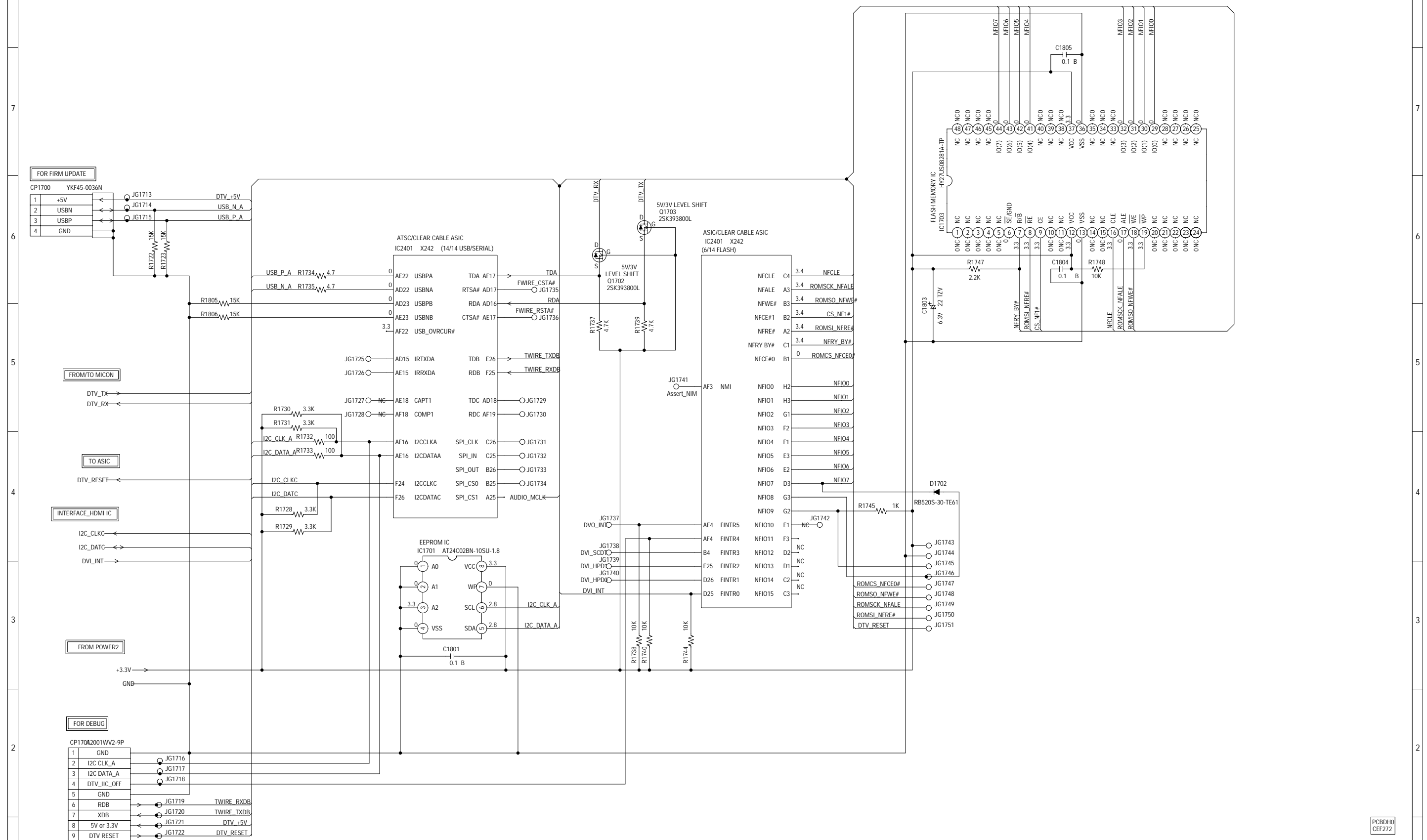


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL

PCBDH0
CEF272

FLASH SCHEMATIC DIAGRAM (DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

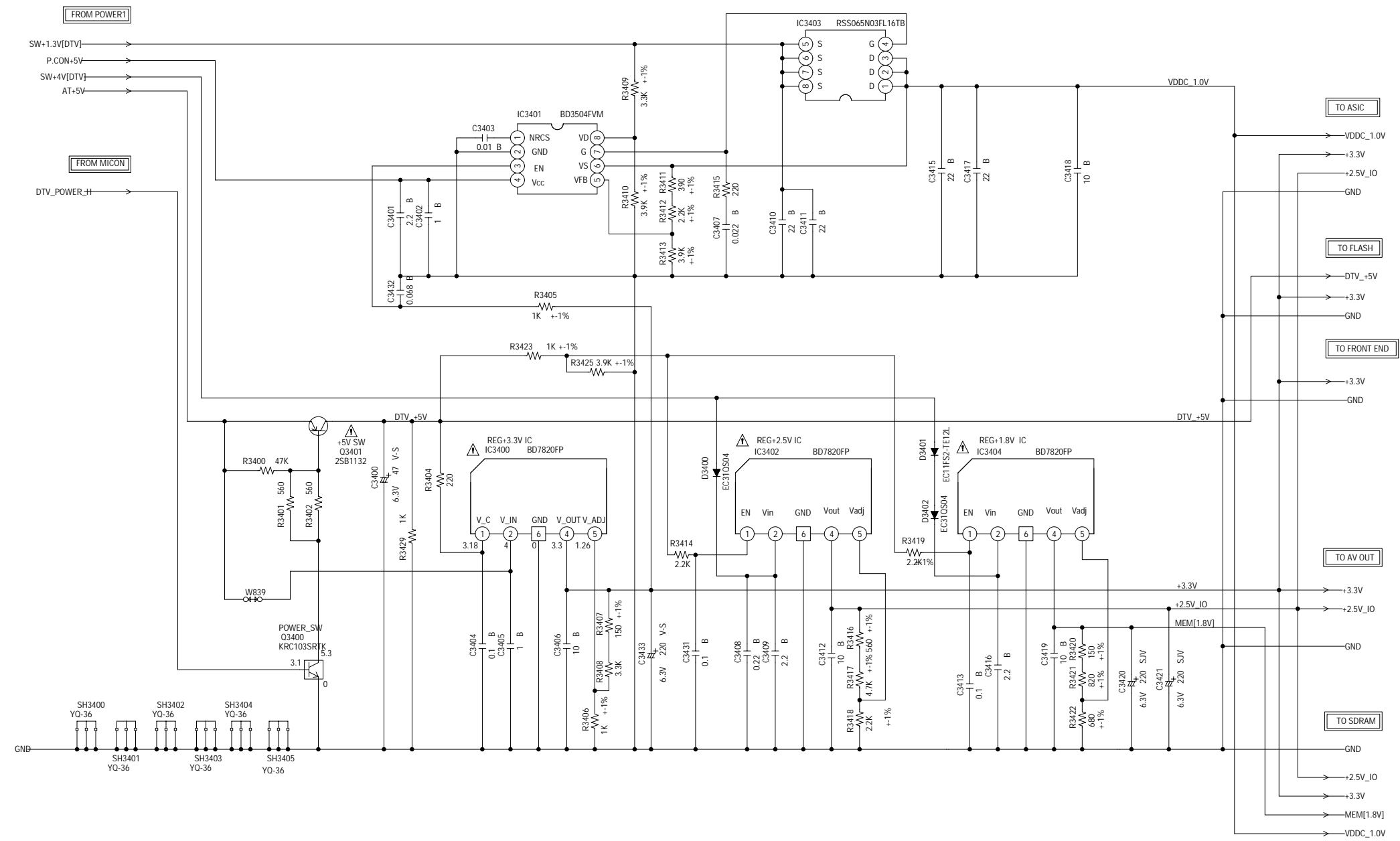
(DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL


POWER2 SCHEMATIC DIAGRAM
(DIGITAL PCB)




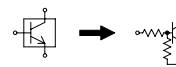
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

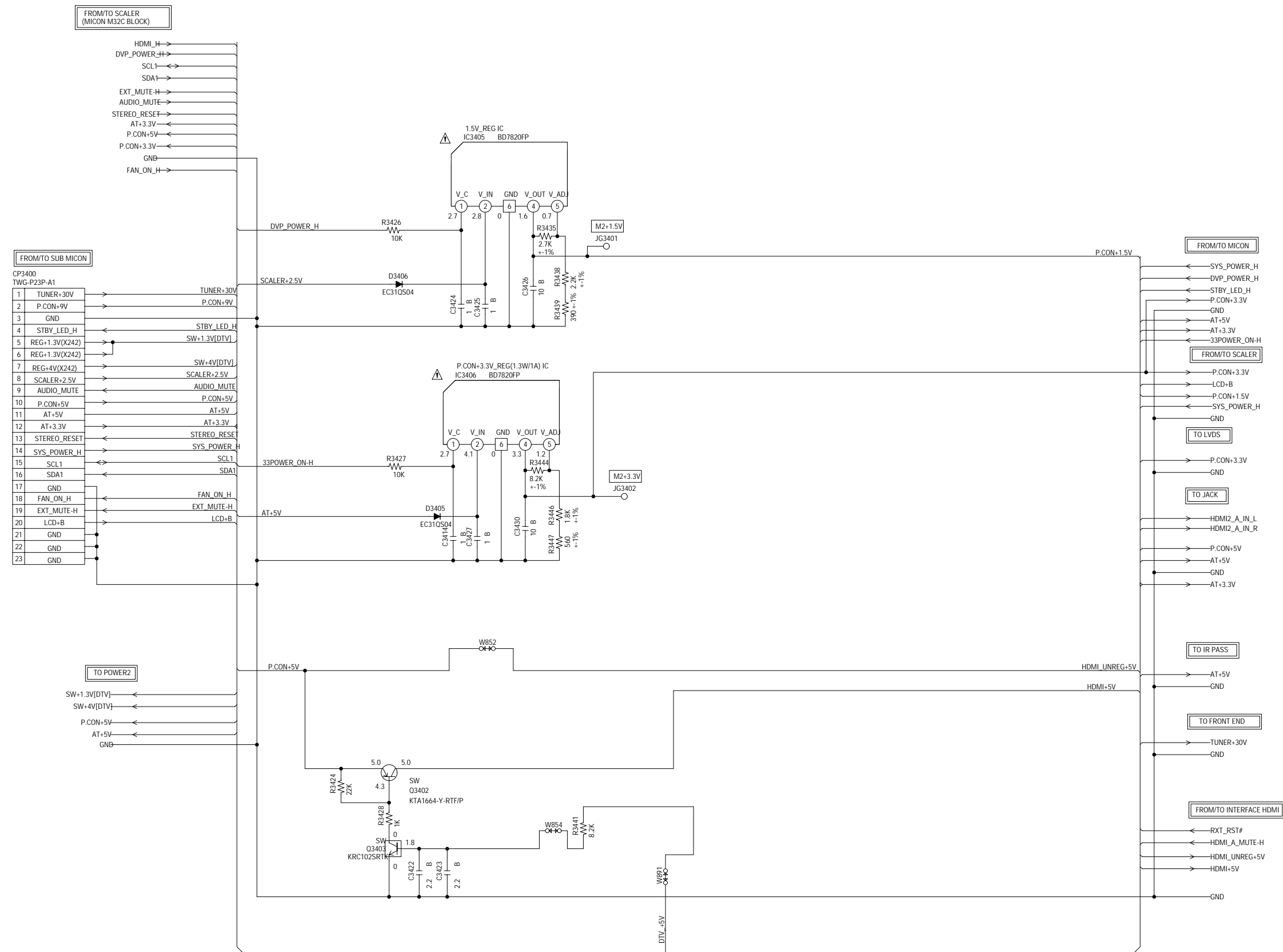
ATTENTION: LES PIECES REPARÉES PAR UN  ETANT DANGEREUSES AN POINT DE VUE SECURITE, N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR 

CAUTION: DIGITAL TRANSISTOR 

PCBDH0
CEF272

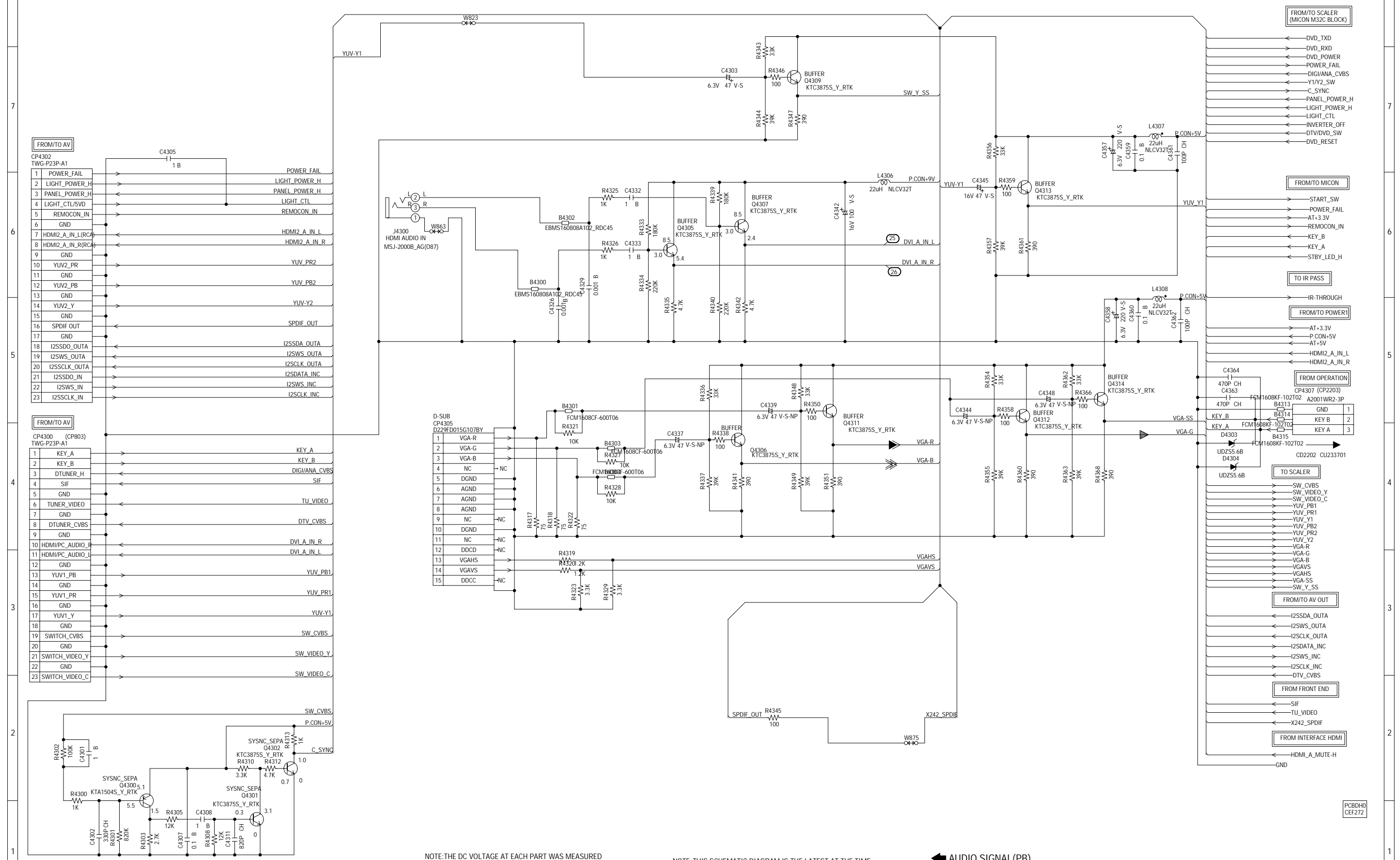
POWER1 SCHEMATIC DIAGRAM (DIGITAL PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

JACK SCHEMATIC DIAGRAM
(DIGITAL PCB)



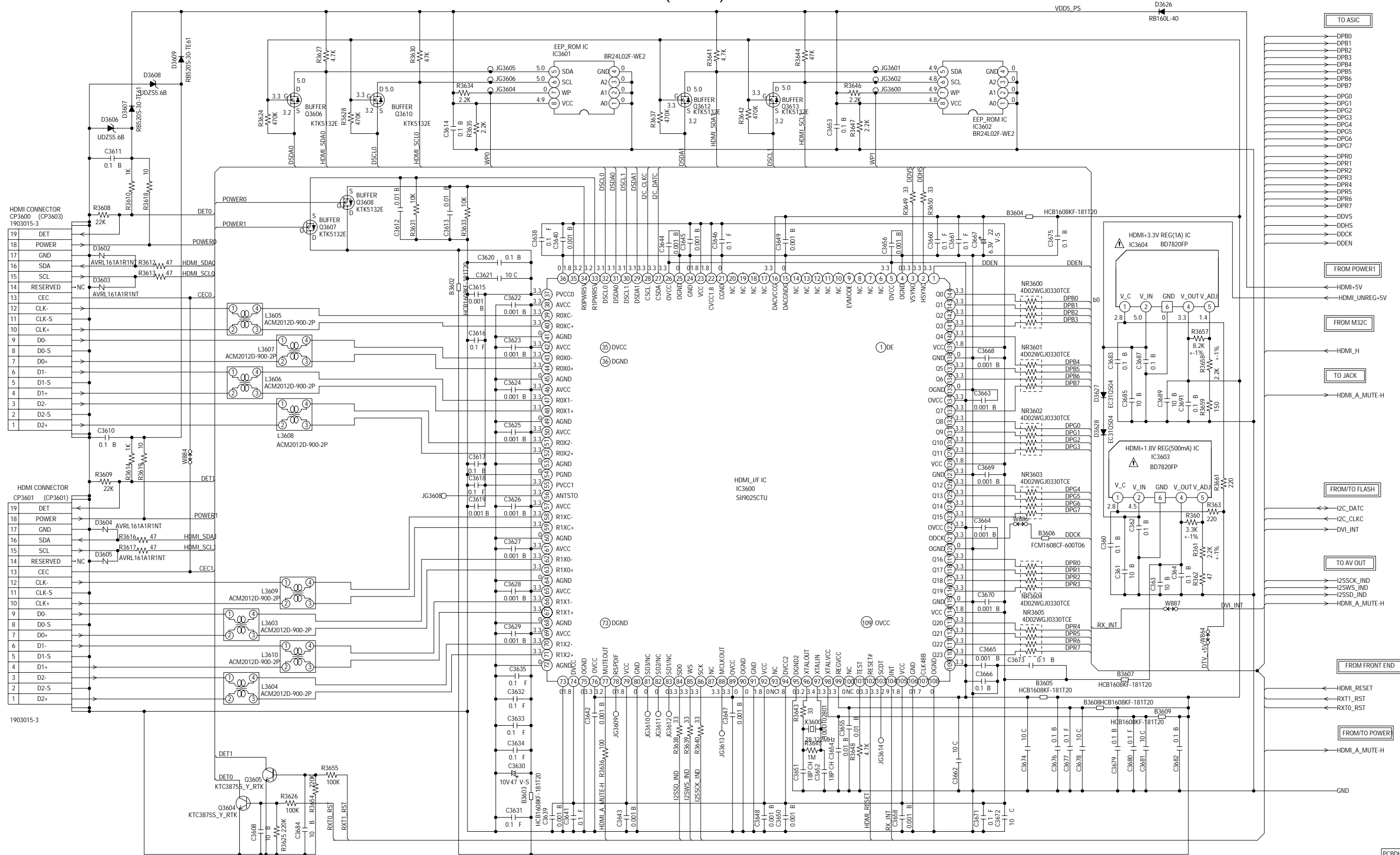
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

◀ AUDIO SIGNAL(PB)
▶ PLAYBACK LUMINANCE SIGNAL

PCBDH01
CEF272

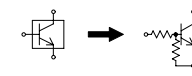
INTERFACE_HDMI IC SCHEMATIC DIAGRAM (AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

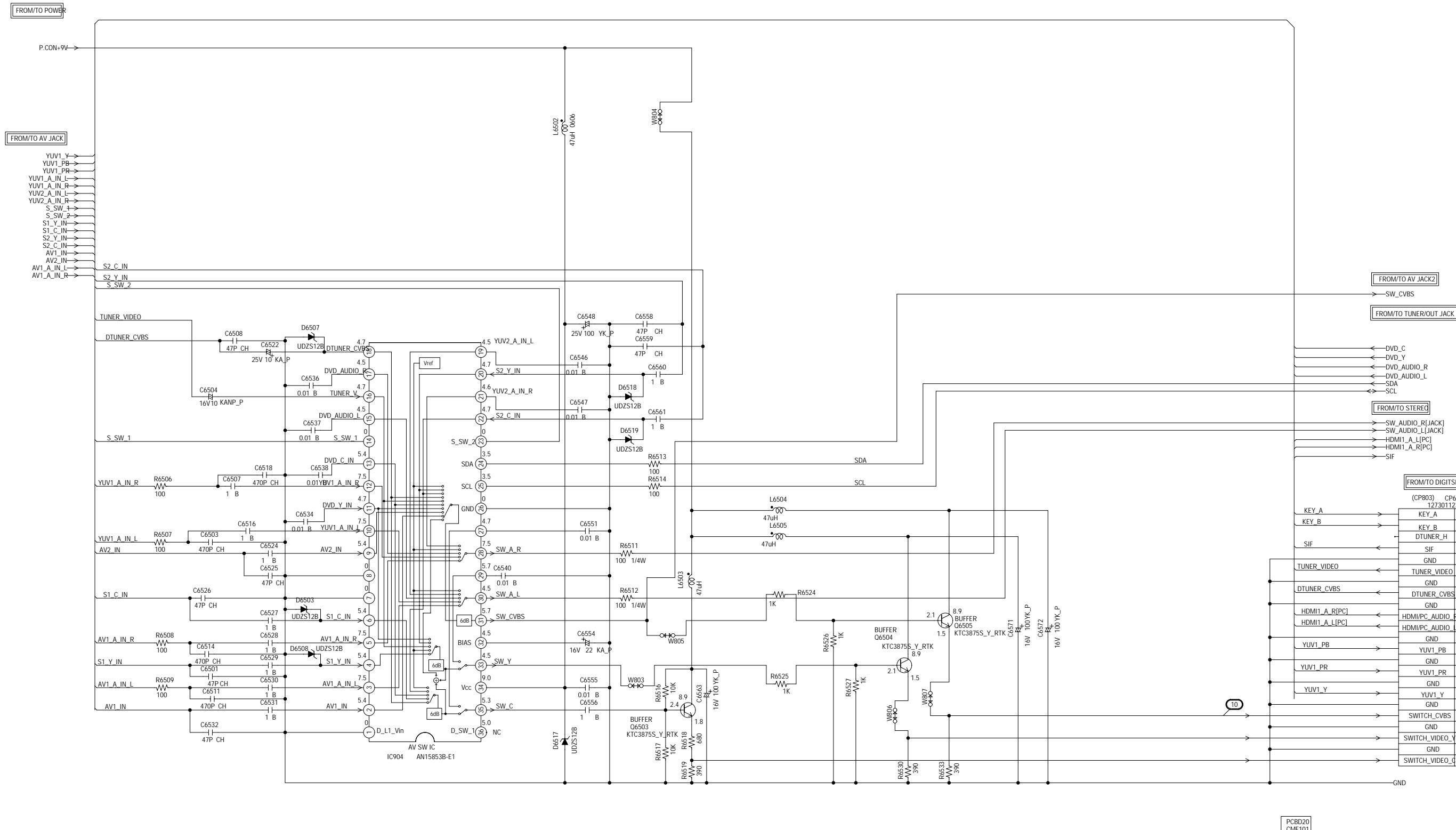
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR



PCBD010
CEF272

AV SWITCH2 SCHEMATIC DIAGRAM
(AV PCB)



CAUTION: DIGITAL TRANSISTOR



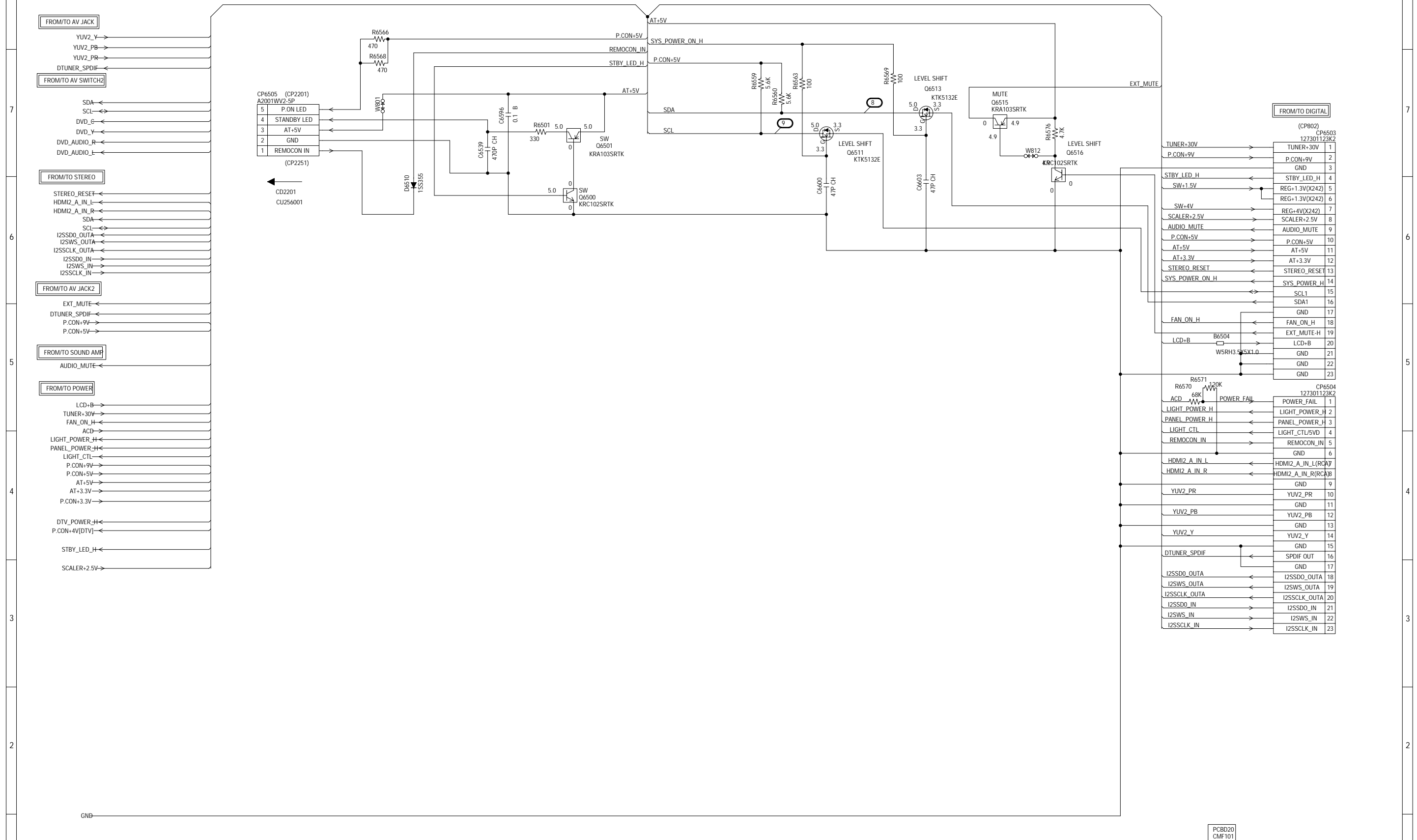
CAUTION: DIGITAL TRANSISTOR



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

(AV PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

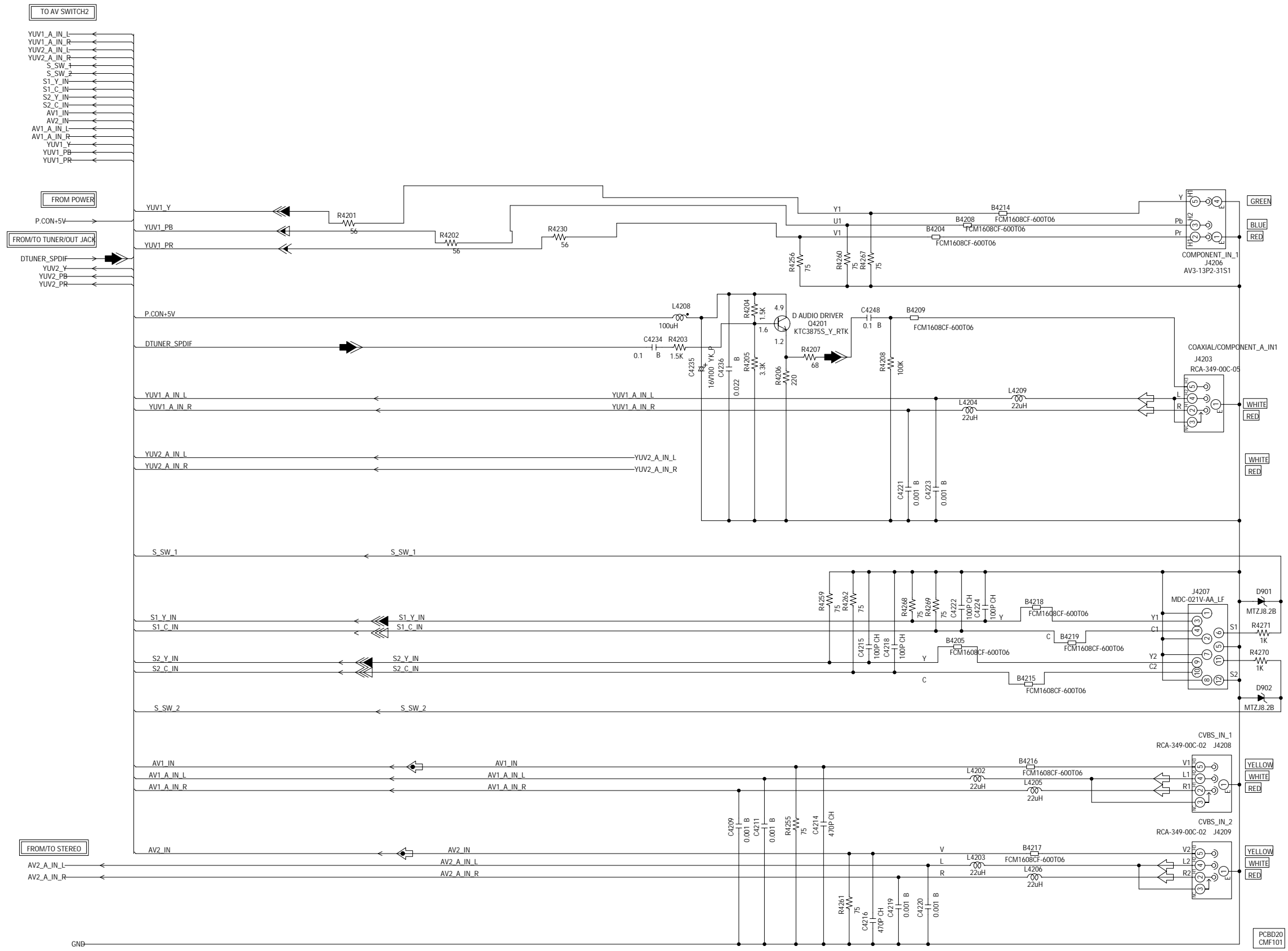
CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR



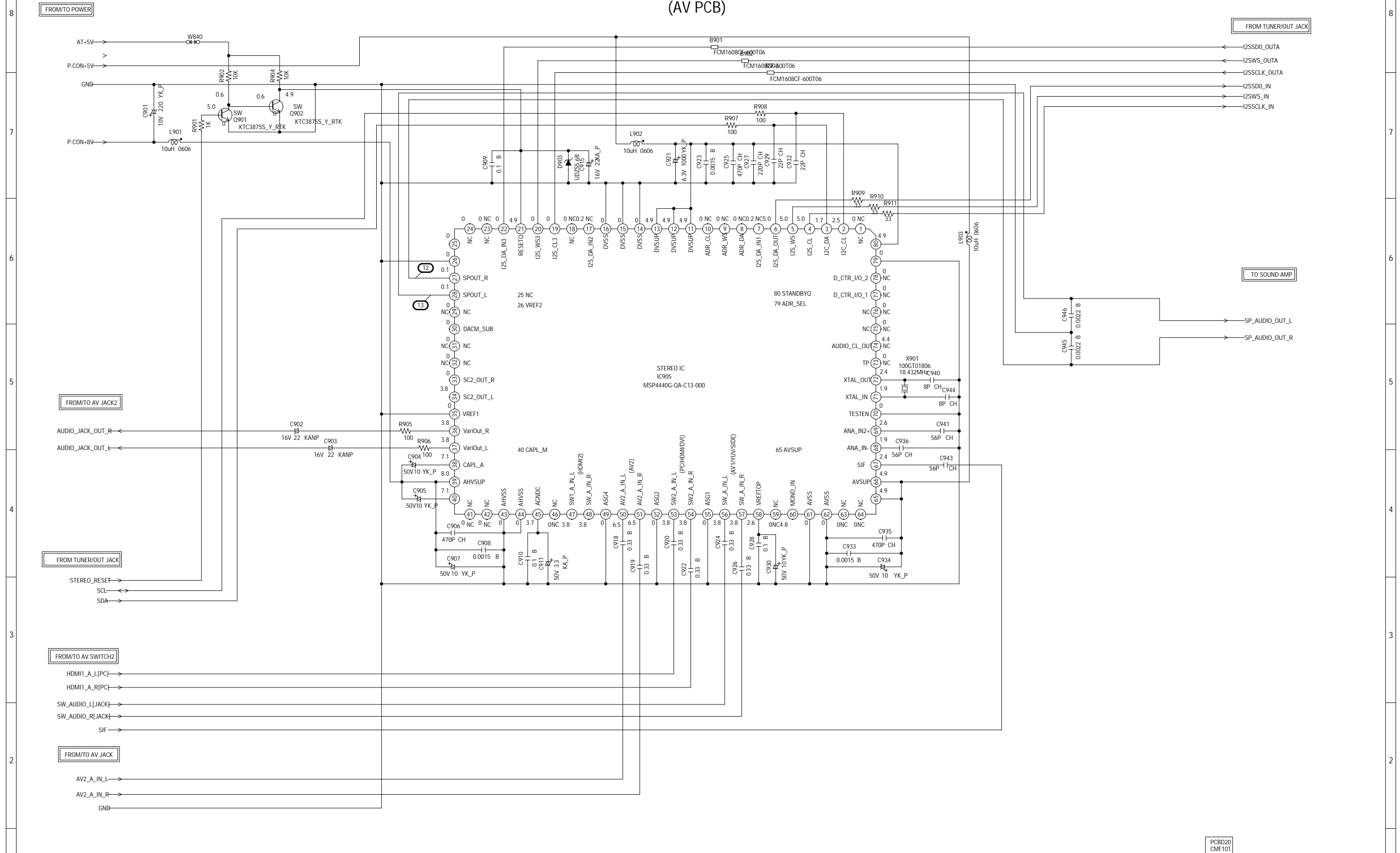
AV JACK SCHEMATIC DIAGRAM
(AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

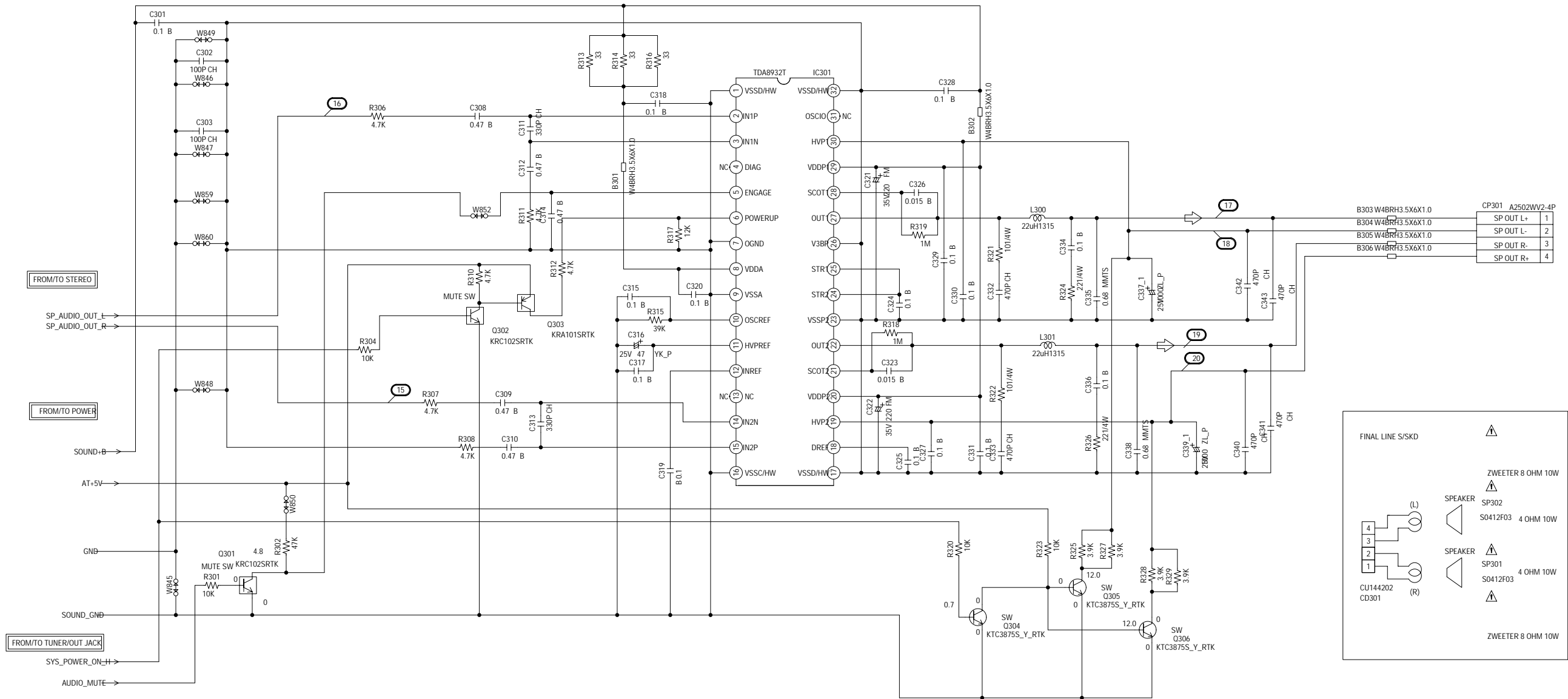
STEREO SCHEMATIC DIAGRAM (AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SOUND AMP SCHEMATIC DIAGRAM
(AV PCB)



CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY .

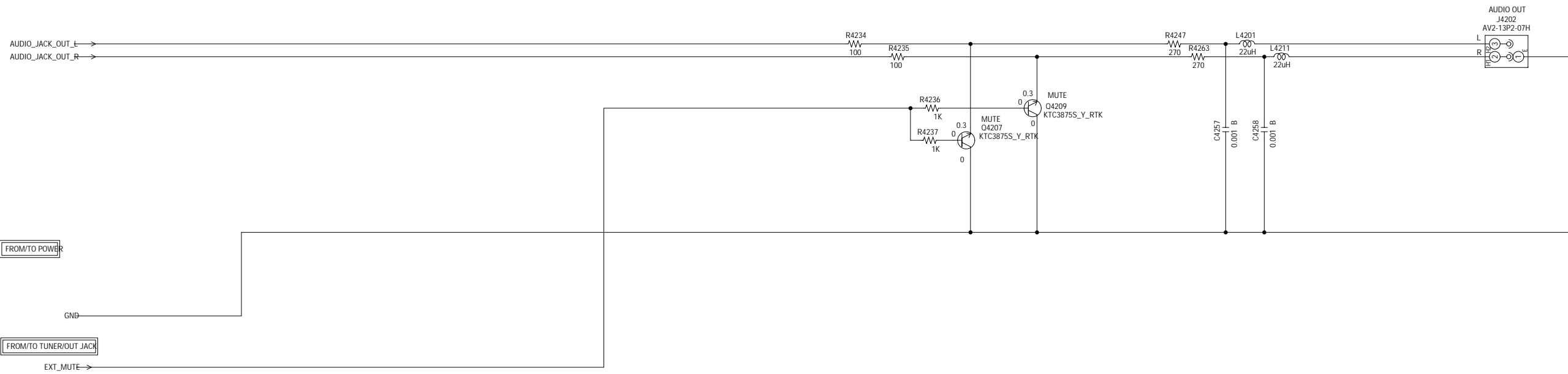
ATTENTION LES PIECES REPARÉES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBD20
CMF101

AV JACK2 SCHEMATIC DIAGRAM
(AV PCB)

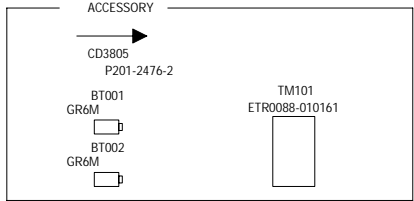


FROM/TO POWER

FROM/TO TUNER/OUT JACK

EXT_MUTE

AUDIO OUT
J4202
AV2-13P2-07H

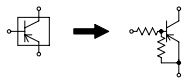


PCBD20
CMF101

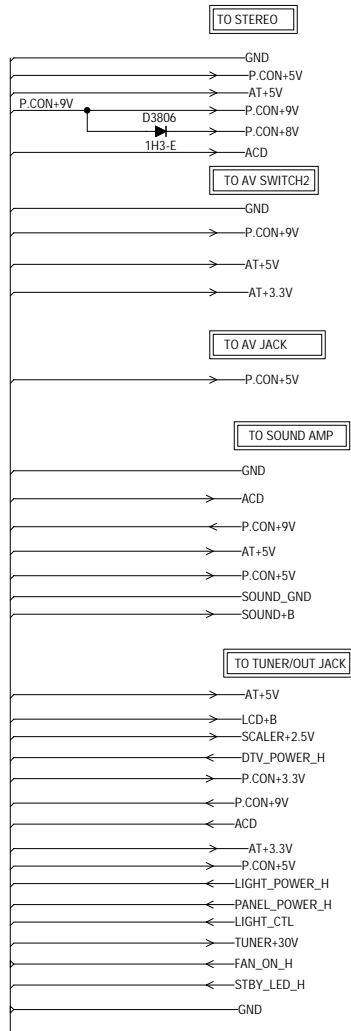
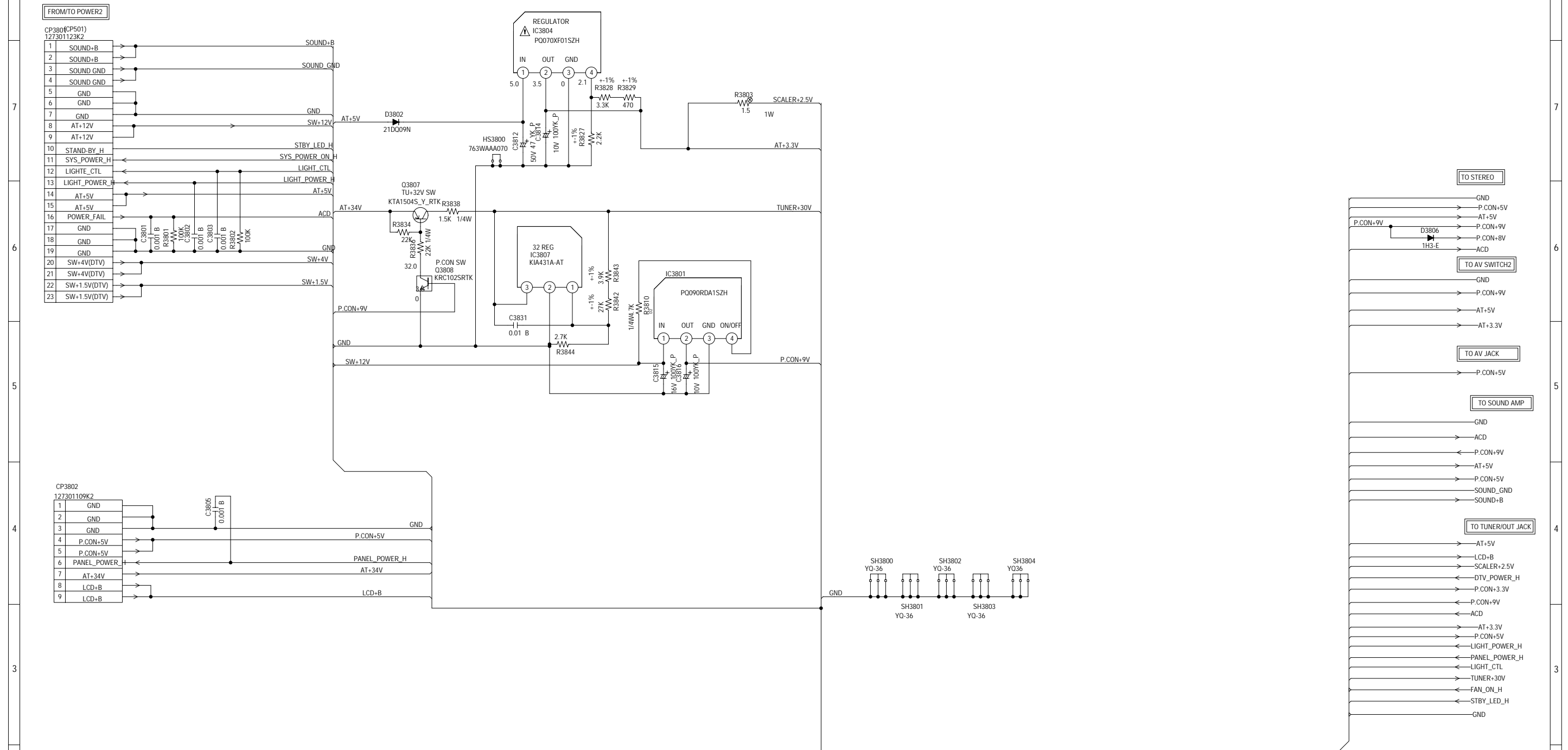
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR



POWER SCHEMATIC DIAGRAM
(AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

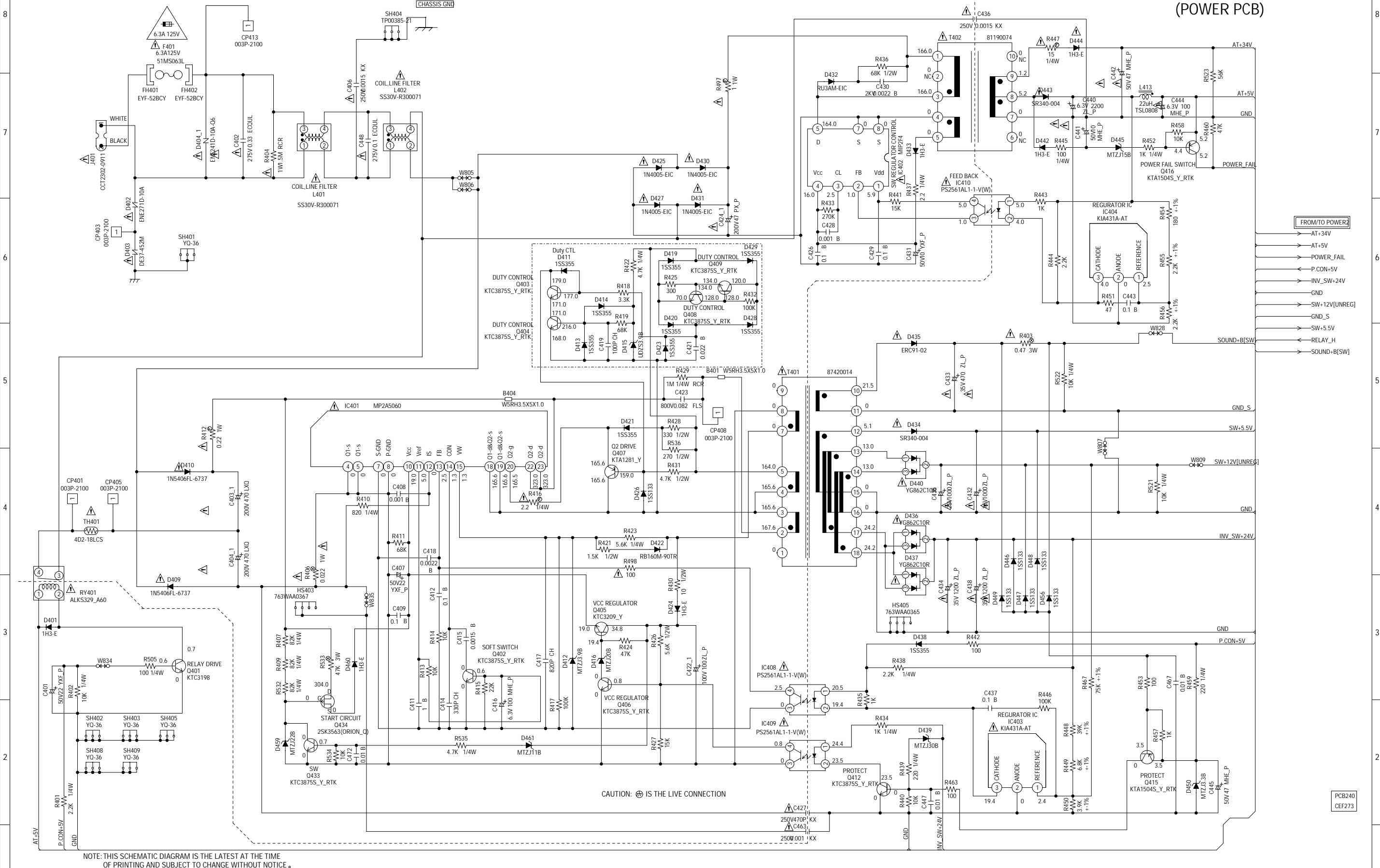
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

ATTENTION: LES PIÈCES RÉPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

PCBD20
CMF101


POWER1 SCHEMATIC DIAGRAM
(POWER PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

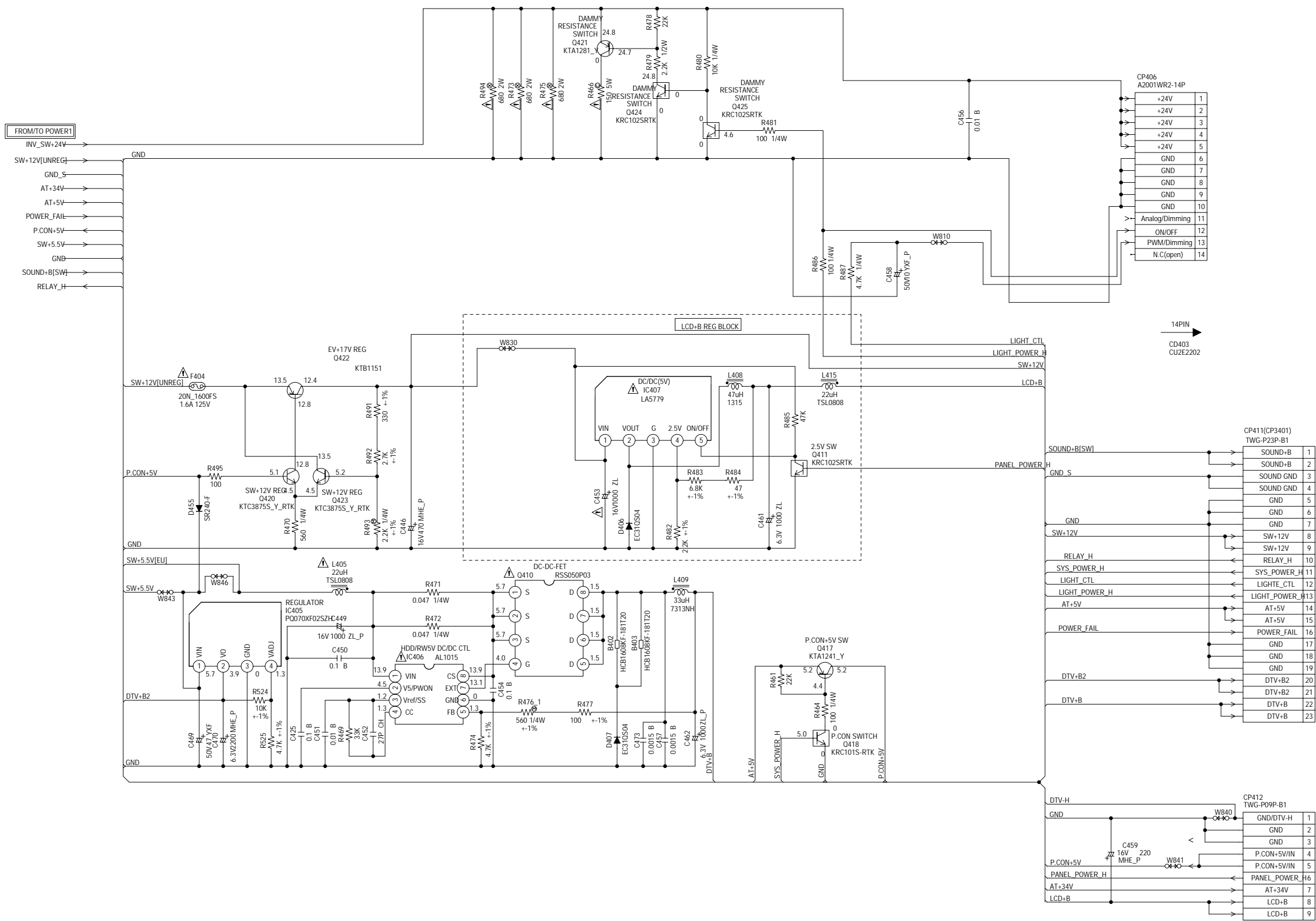
CAUTION: ⊕ IS THE LIVE CONNECTION

ATTENTION: LES PIÉCES RÉPARÉES PAR UN  ÉTANT
DANGEREUSES AU POINT DE VUE SÉCURITÉ
N'UTILISER QUE CELLES DÉCRITES
DANS LA NOMENCLATURE DES PIÉCES.

CAUTION: DIGITAL TRANSISTOR





POWER2 SCHEMATIC DIAGRAM
(POWER PCB)



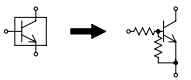
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPARÉES PAR UN  ETANT DANGEREUSES AN POINT DE VUE SECURITE, UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

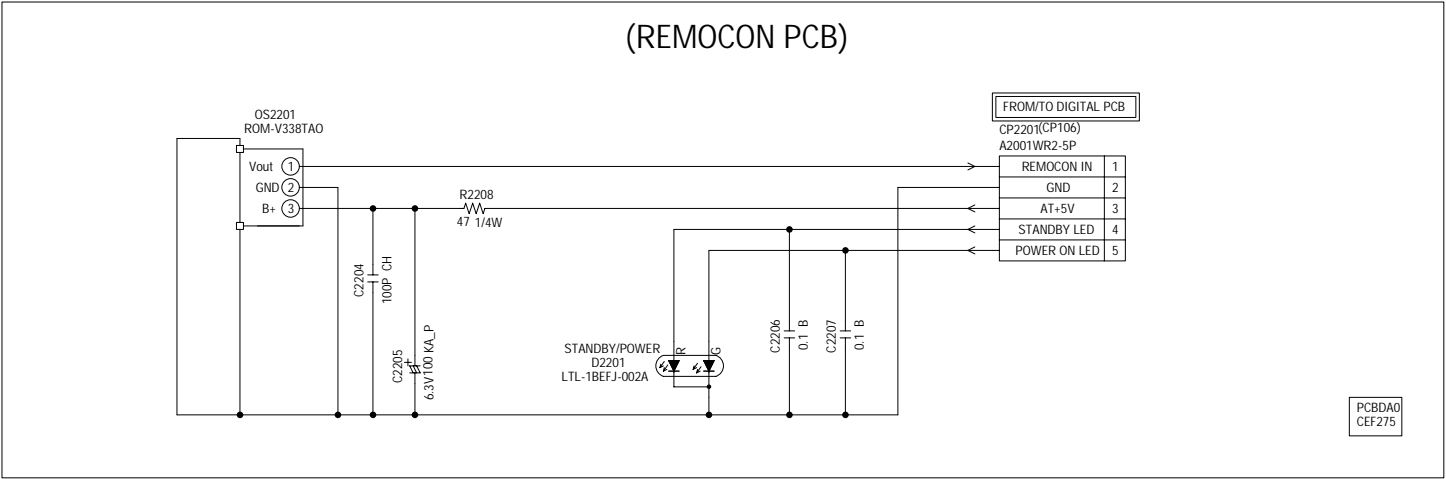
CAUTION: DIGITAL TRANSISTOR



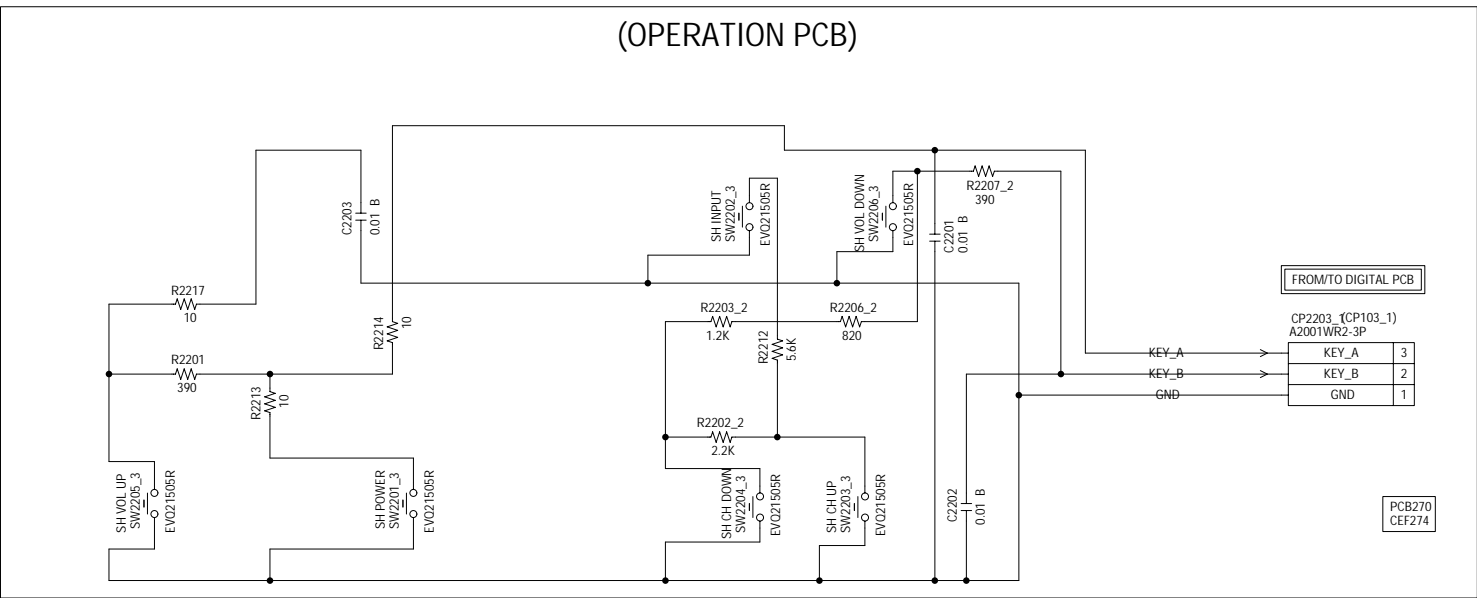
PCB240
CEF273

OPERATION/REMOCON SCHEMATIC DIAGRAM

(REMOCON PCB)



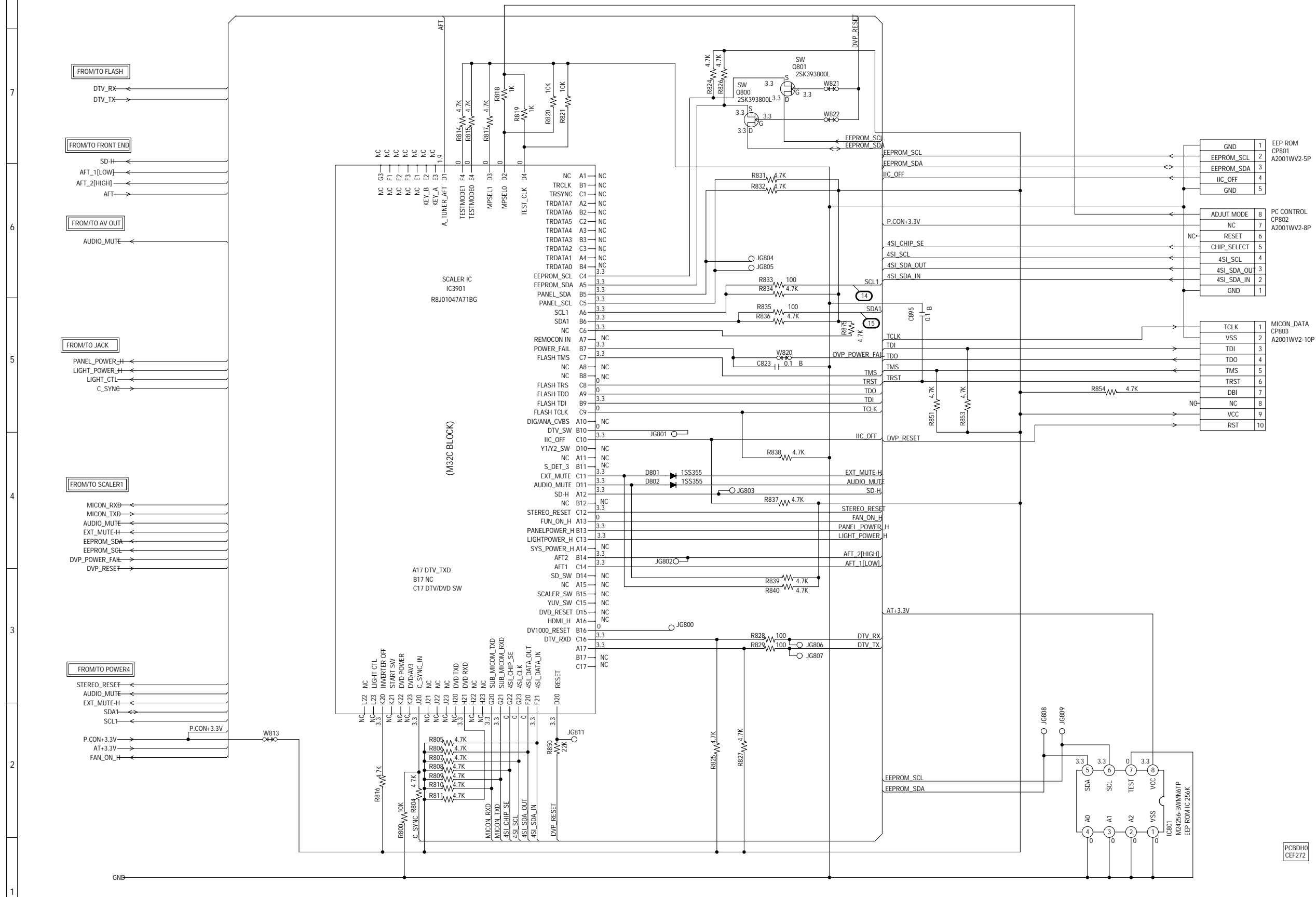
(OPERATION PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

SCALER2 SCHEMATIC DIAGRAM (M32C BLOCK)

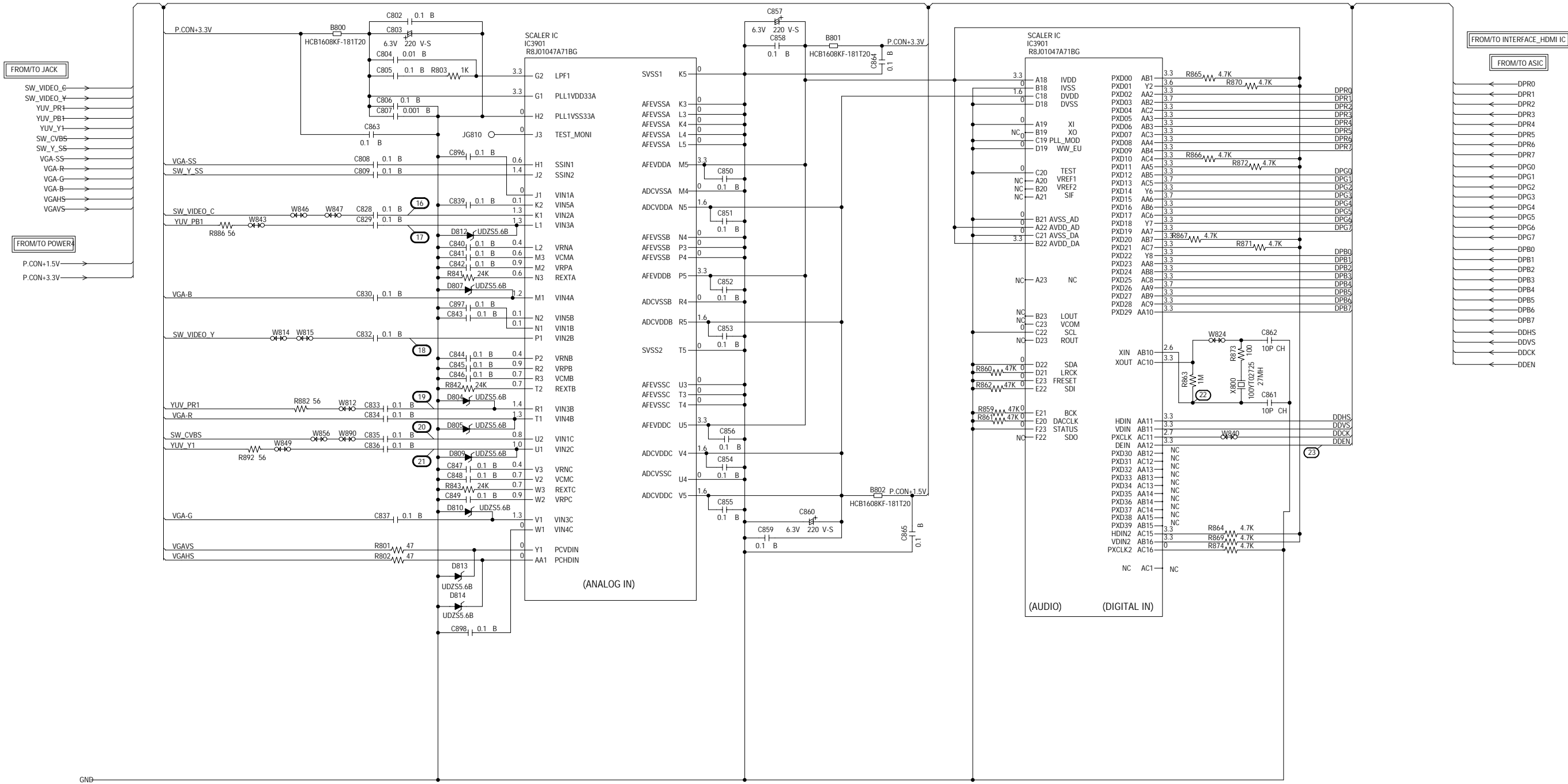


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEF272

SCALER3 SCHEMATIC DIAGRAM (ANALOG BLOCK/DIGITAL IN BLOCK)
(DIGITAL PCB)

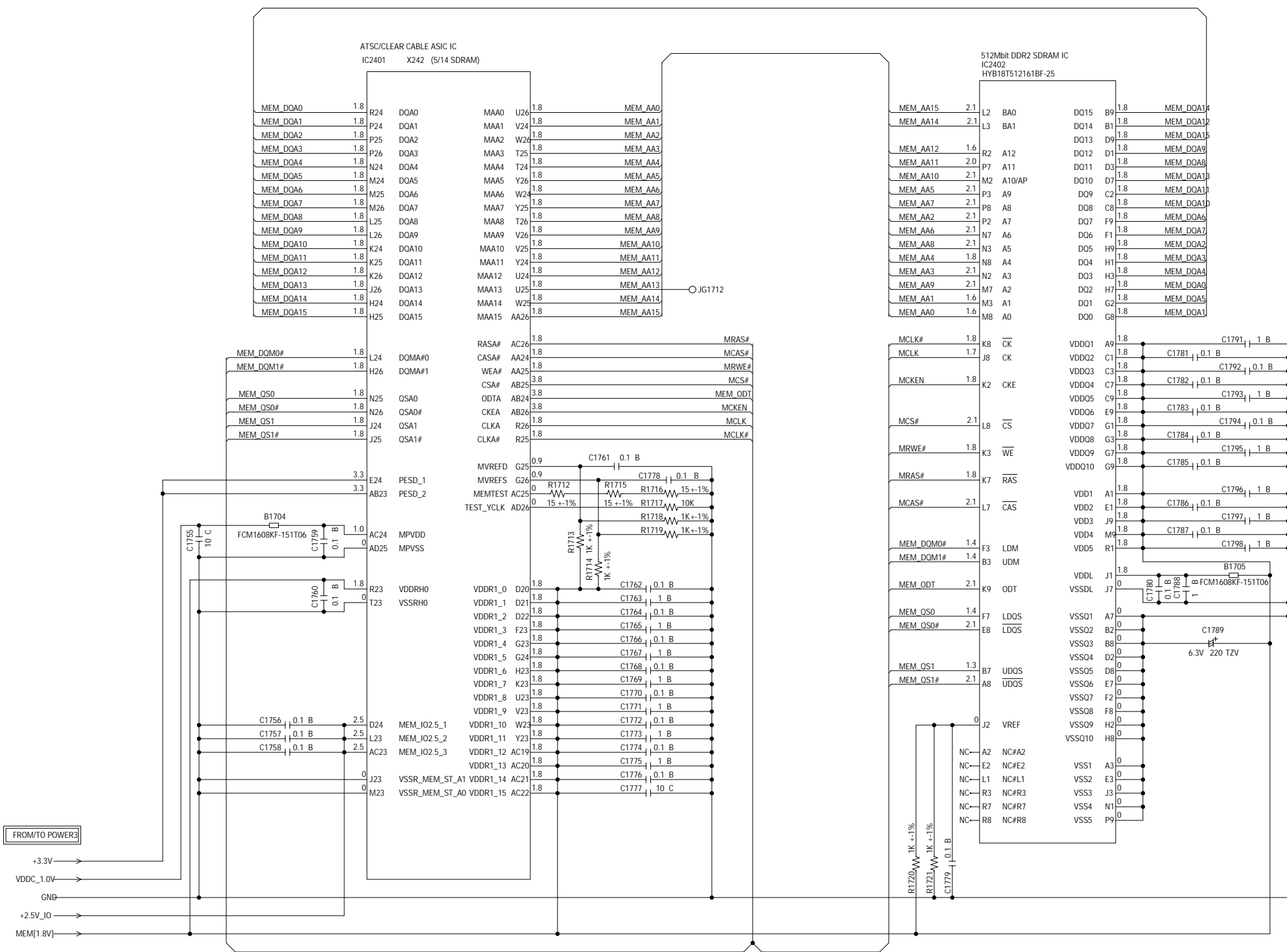


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEF272

SDRAM SCHEMATIC DIAGRAM
(DIGITAL PCB)



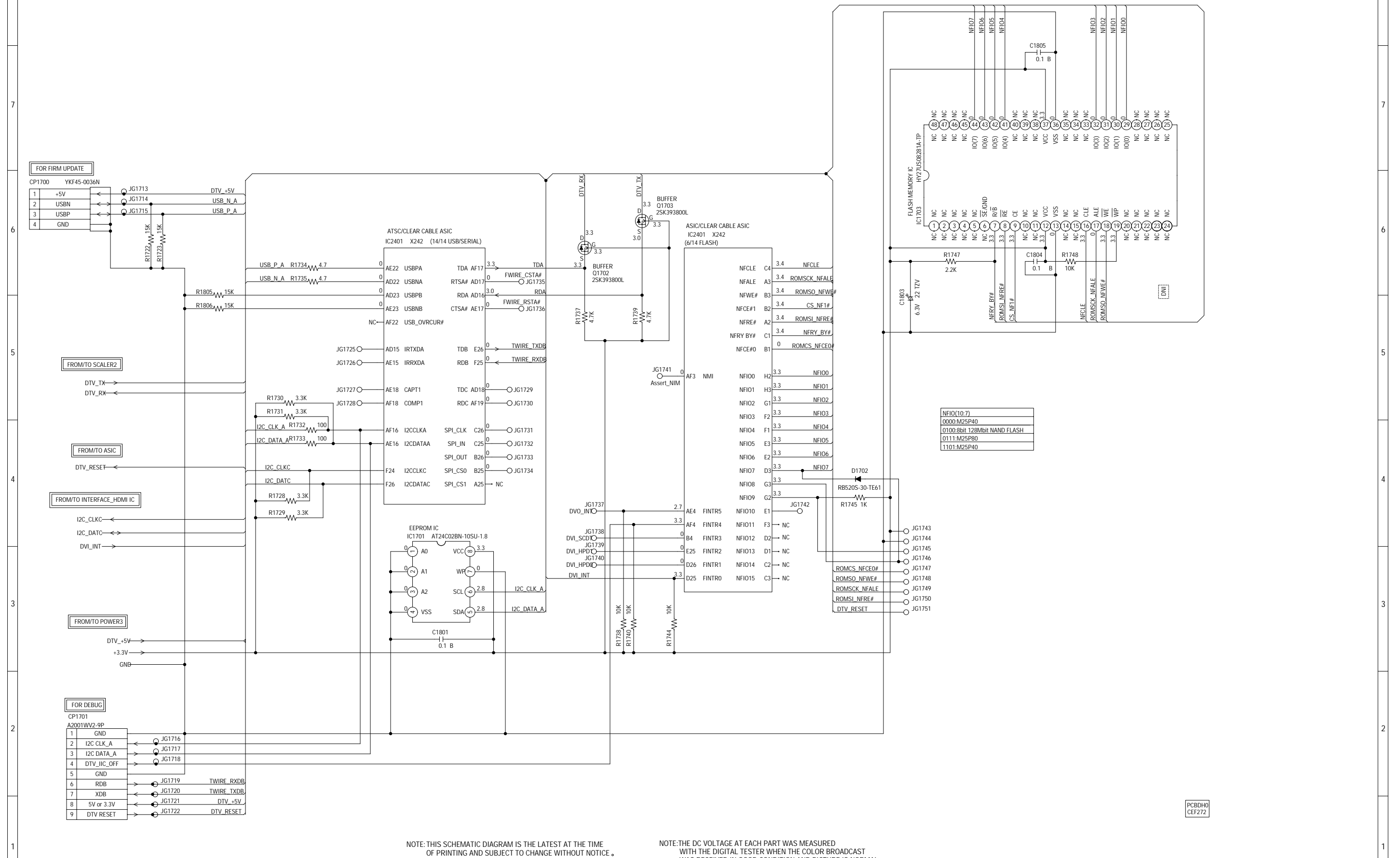
DDR2 PIN Name	4-LAYER CEF272A CEF276A	6-LAYER CEF251A CEF254A
A12	MEM_AA12	MEM_AA12
A11	MEM_AA11	MEM_AA11
A10	MEM_AA10	MEM_AA10
A9	MEM_AA5	MEM_AA9
A8	MEM_AA7	MEM_AA8
A7	MEM_AA2	MEM_AA7
A6	MEM_AA6	MEM_AA6
A5	MEM_AA8	MEM_AA5
A4	MEM_AA4	MEM_AA4
A3	MEM_AA3	MEM_AA3
A2	MEM_AA9	MEM_AA2
A1	MEM_AA1	MEM_AA1
A0	MEM_AA0	MEM_AA0
D015	MEM_D0A14	MEM_D0A15
D014	MEM_D0A12	MEM_D0A14
D013	MEM_D0A15	MEM_D0A9
D012	MEM_D0A9	MEM_D0A10
D011	MEM_D0A8	MEM_D0A8
D010	MEM_D0A13	MEM_D0A12
D09	MEM_D0A11	MEM_D0A11
D08	MEM_D0A10	MEM_D0A13
D07	MEM_D0A6	MEM_D0A7
D06	MEM_D0A7	MEM_D0A6
D05	MEM_D0A2	MEM_D0A3
D04	MEM_D0A3	MEM_D0A2
D03	MEM_D0A4	MEM_D0A4
D02	MEM_D0A0	MEM_D0A1
D01	MEM_D0A5	MEM_D0A5
D00	MEM_D0A1	MEM_D0A0

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBDH0
CEF272

FLASH SCHEMATIC DIAGRAM (DIGITAL PCB)



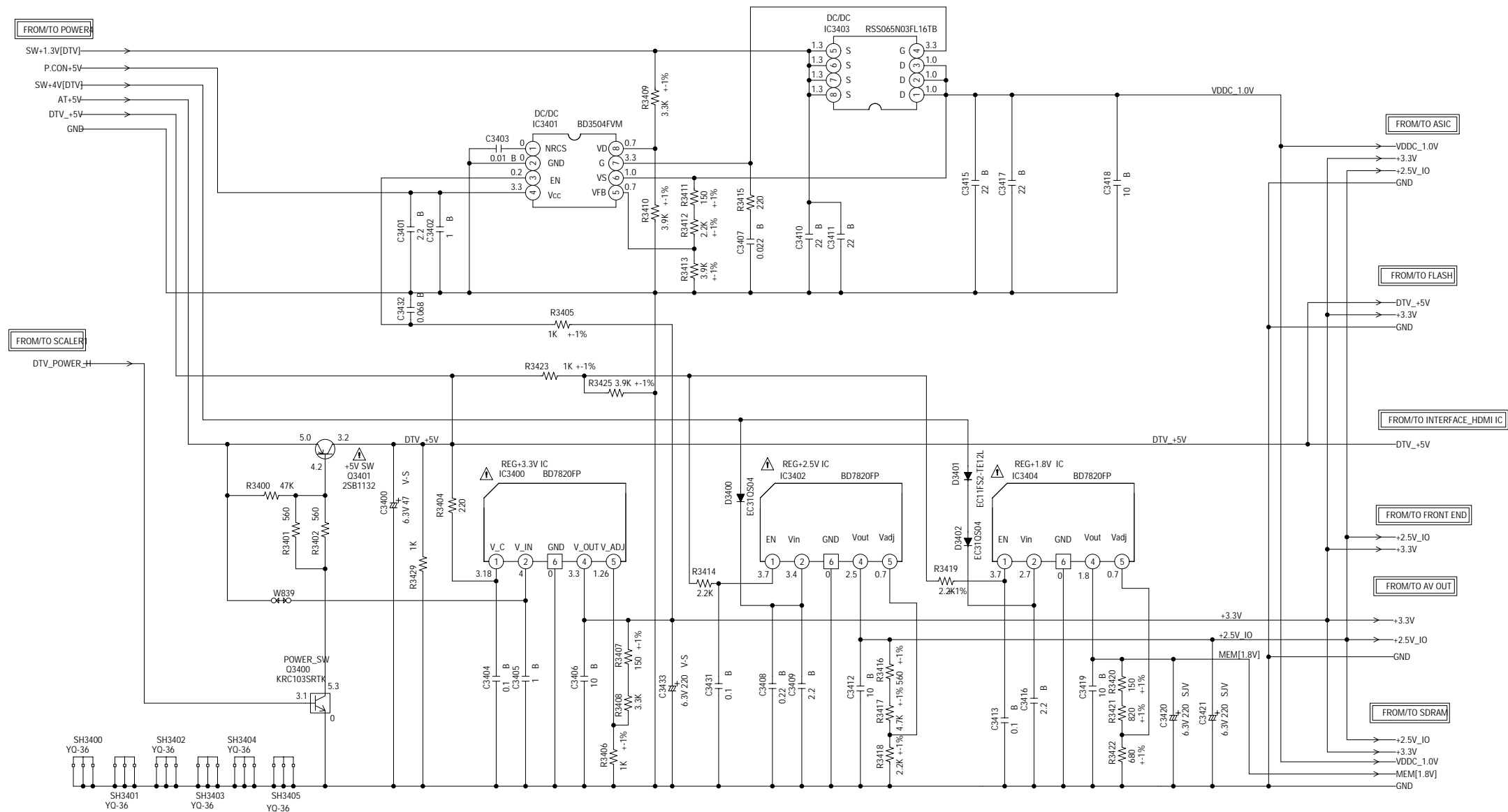
**FRONT END SCHEMATIC DIAGRAM
(DIGITAL PCB)**

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

POWER3 SCHEMATIC DIAGRAM
(DIGITAL PCB)



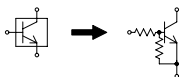
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

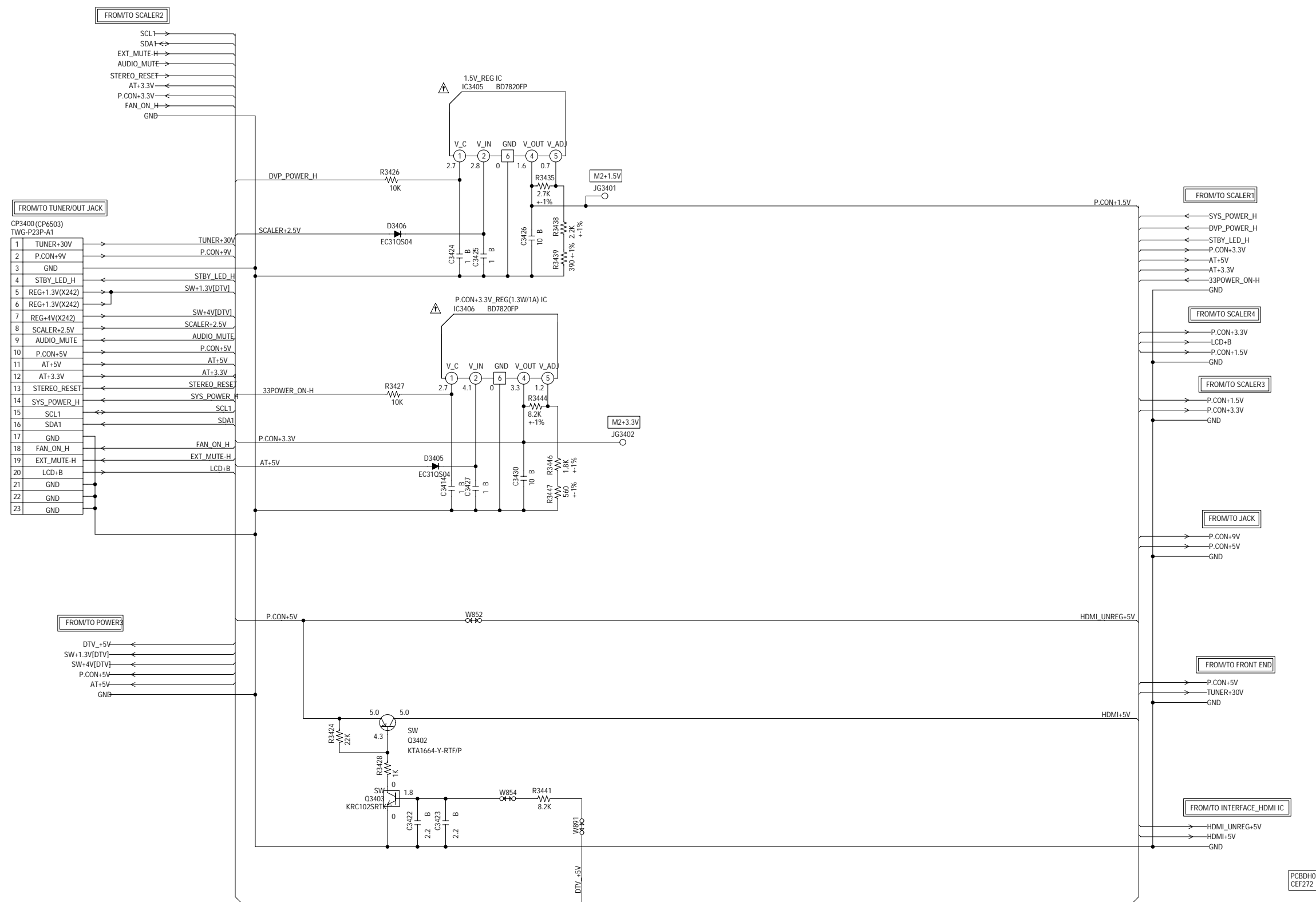
ATTENTION LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR



PCBDH0
CEF272

POWER4 SCHEMATIC DIAGRAM (DIGITAL PCB)



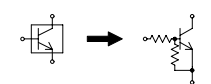
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

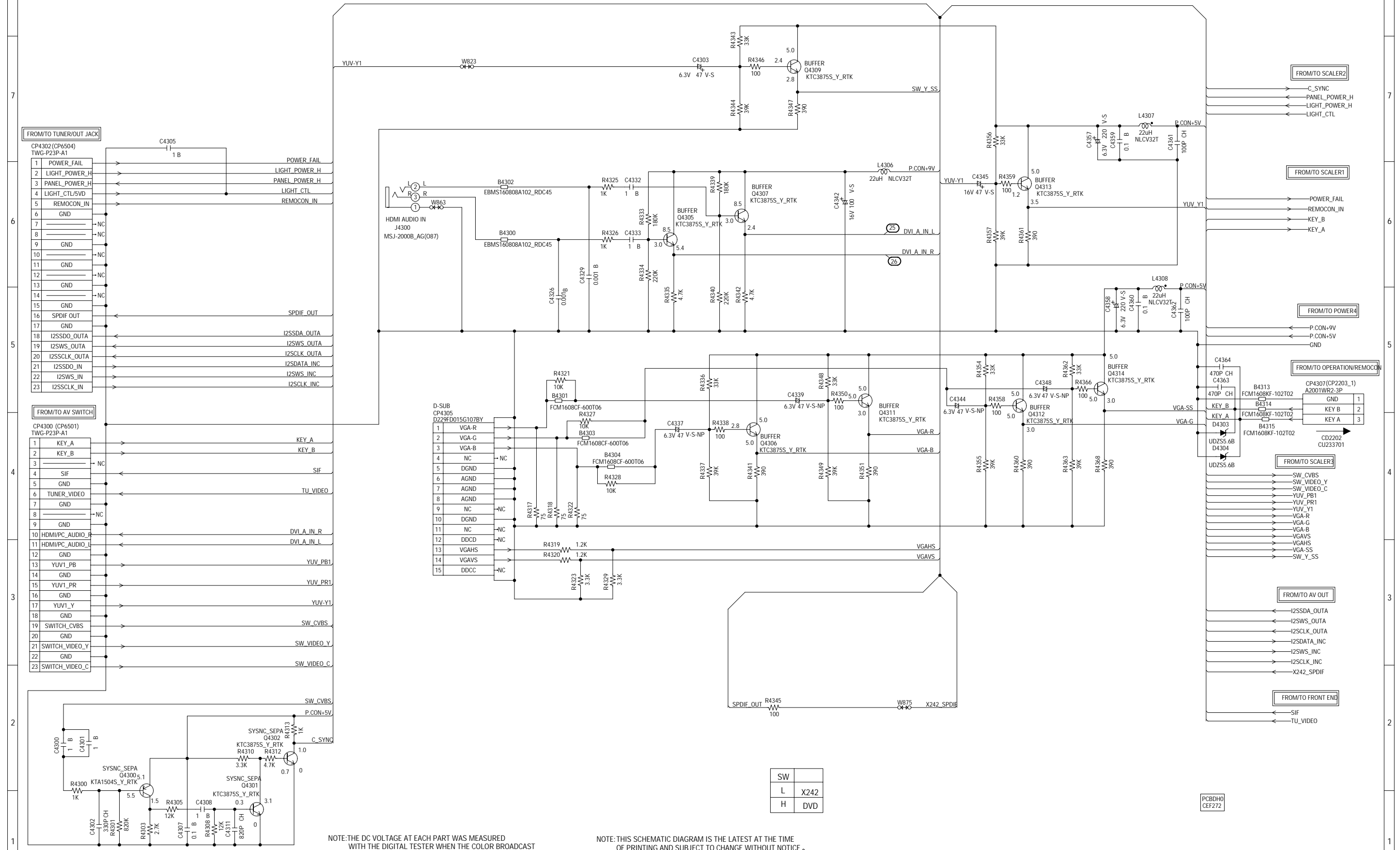
ATTENTION: LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR



PCBDH01
CEF272

JACK SCHEMATIC DIAGRAM
(DIGITAL PCB)



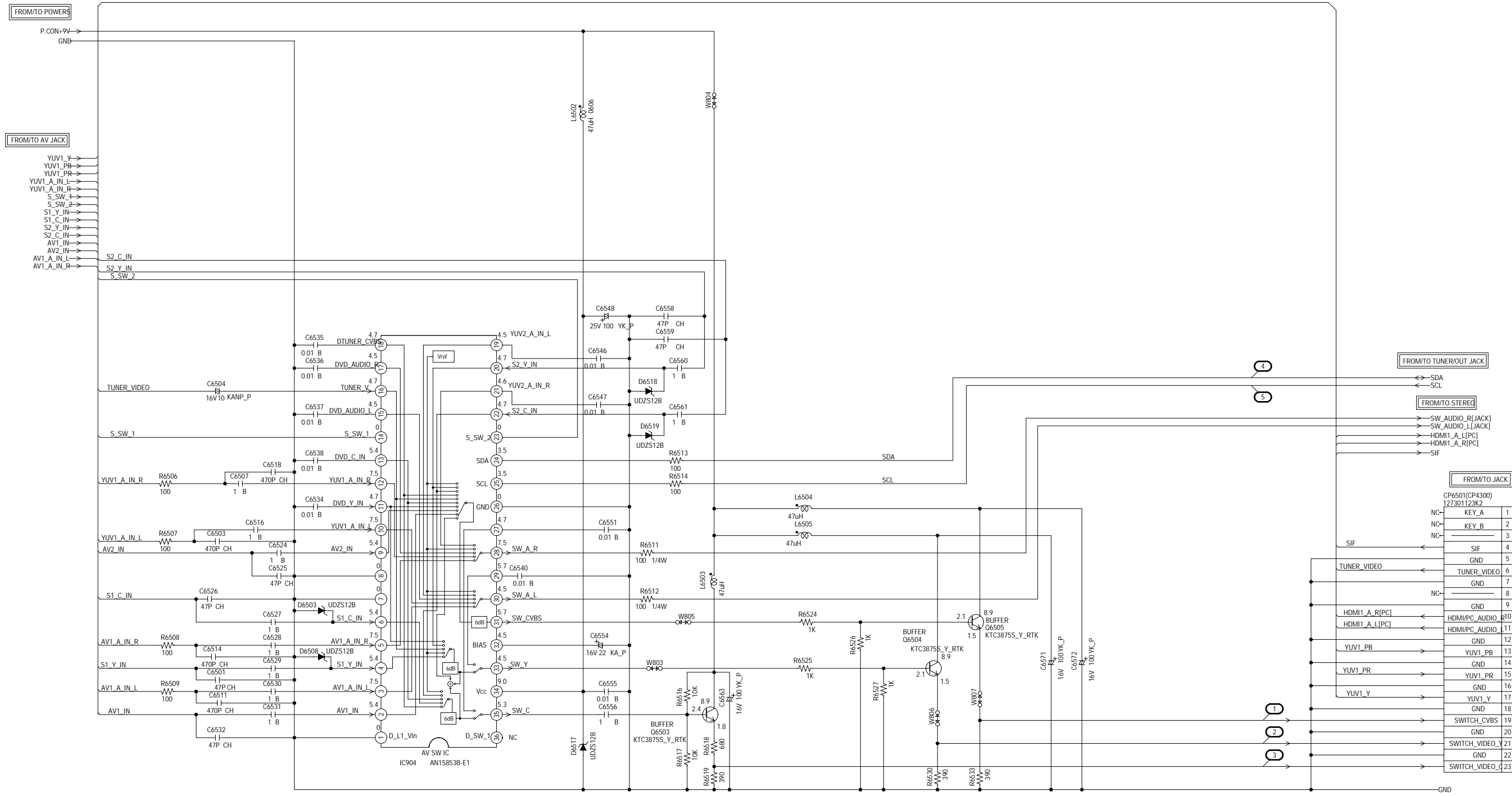
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

SW	
L	X242
H	DVD

PCBDH0
CEF272

AV SWITCH SCHEMATIC DIAGRAM
(AV PCB)

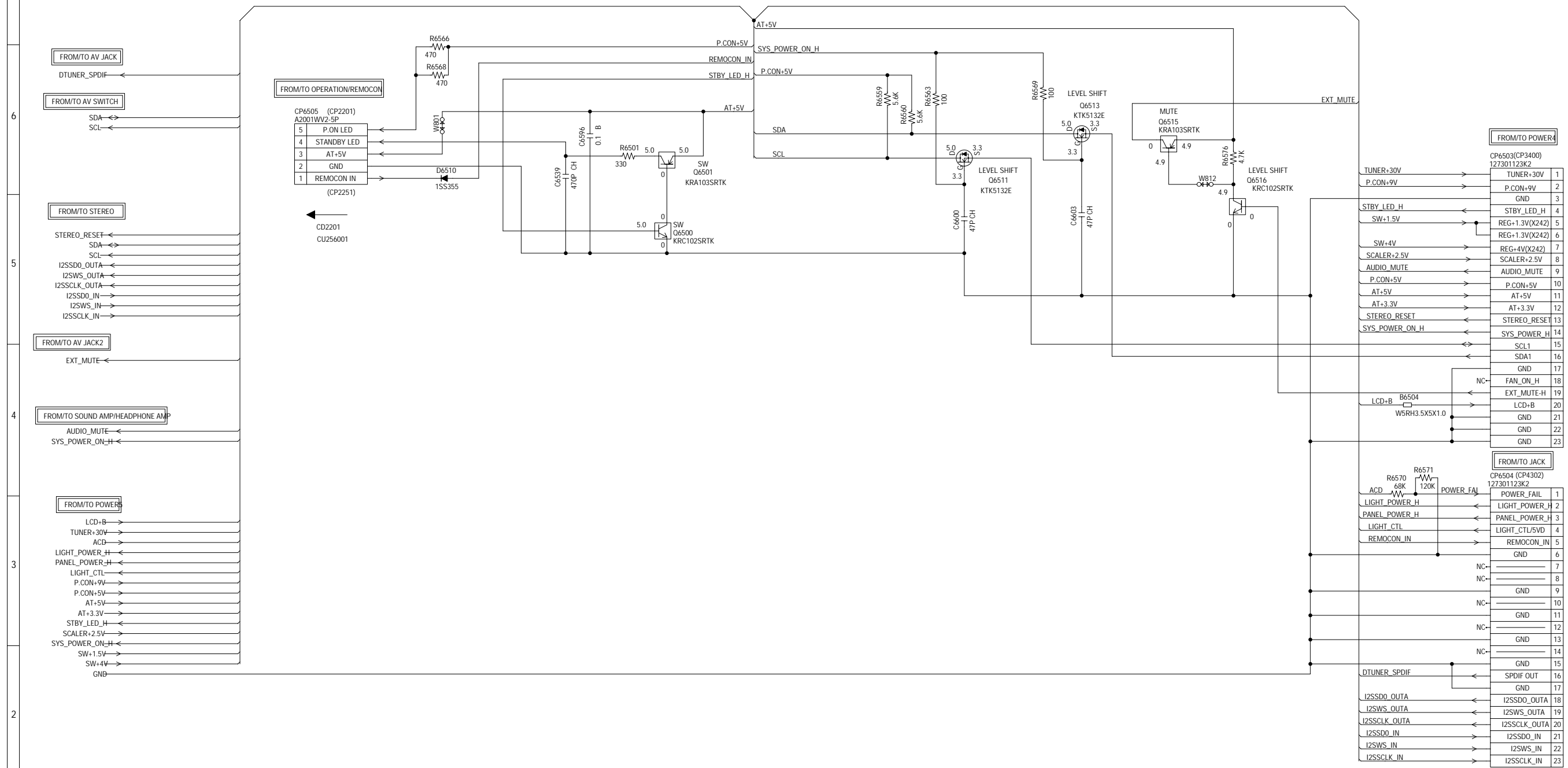


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBD20
CMF101

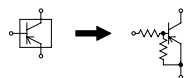
TUNER/OUT JACK SCHEMATIC DIAGRAM
(AV PCB)



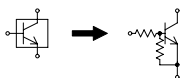
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: DIGITAL TRANSISTOR



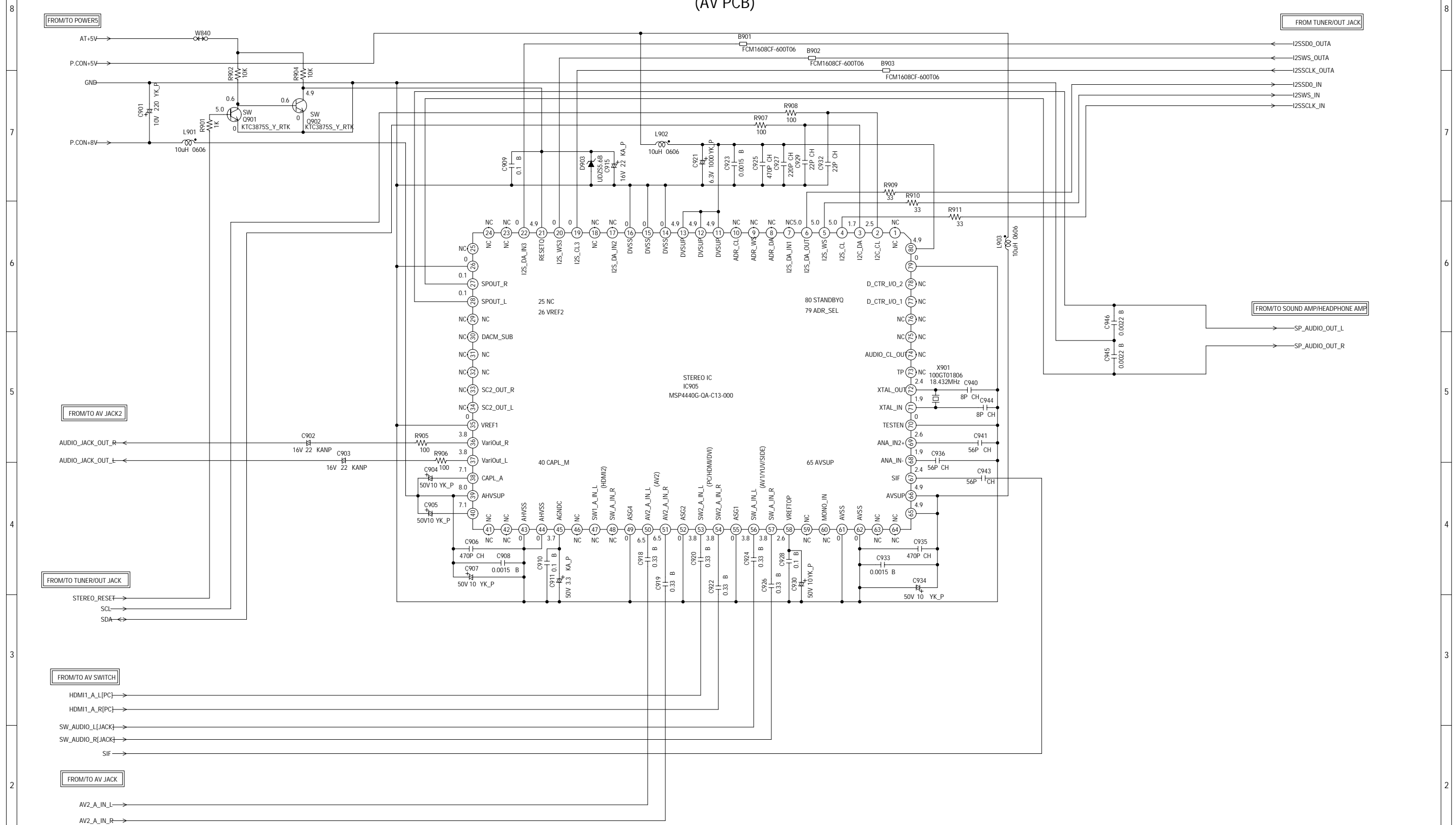
CAUTION: DIGITAL TRANSISTOR



(AV PCB)



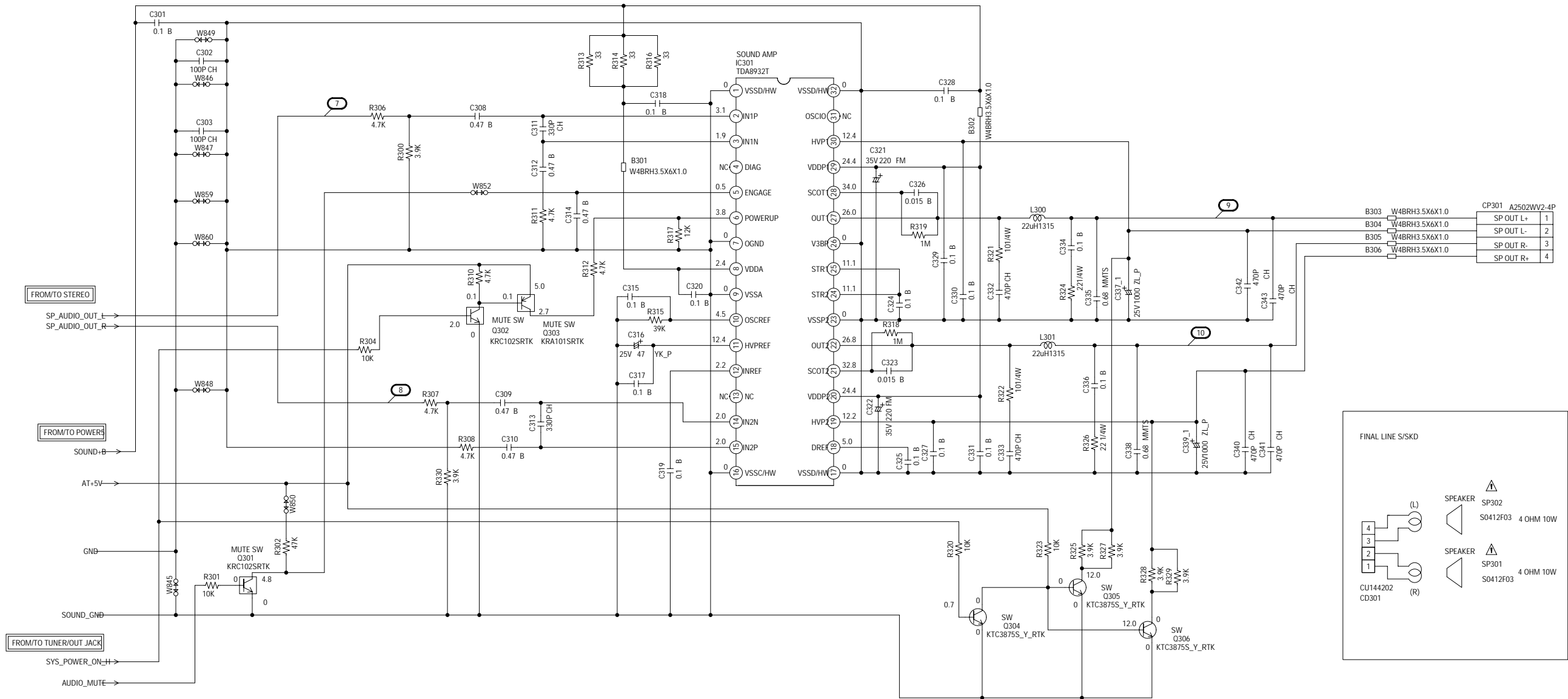
STEREO SCHEMATIC DIAGRAM (AV PCB)



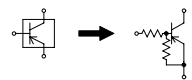
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

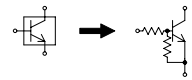
SOUND AMP SCHEMATIC DIAGRAM
(AV PCB)



CAUTION: DIGITAL TRANSISTOR



CAUTION: DIGITAL TRANSISTOR



CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

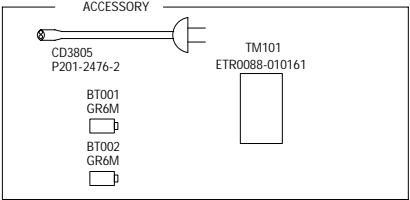
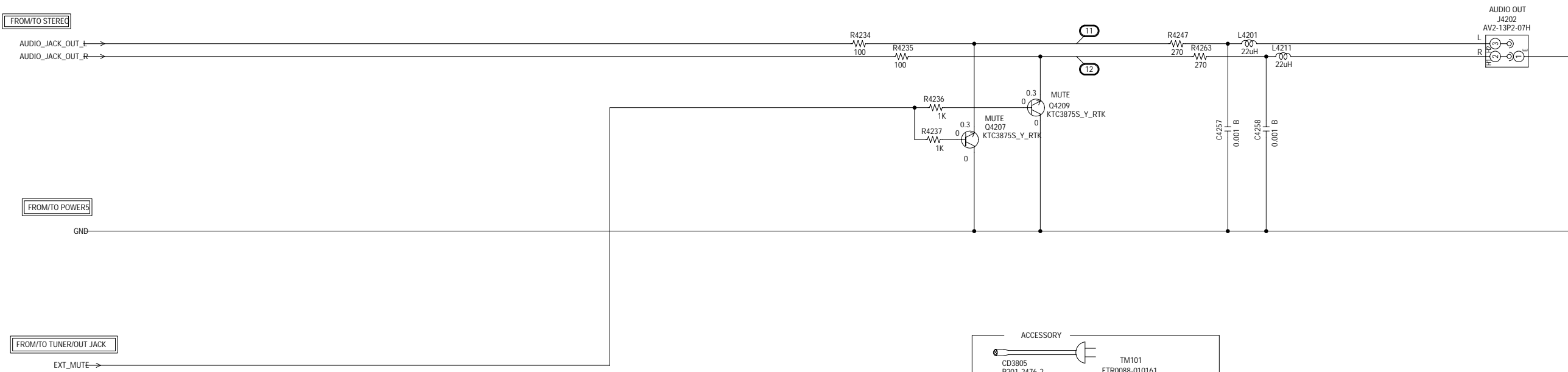
ATTENTION: LES PIECES REPAREES PAR UN ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

PCBD20
CMF101

AV JACK2 SCHEMATIC DIAGRAM
(AV PCB)

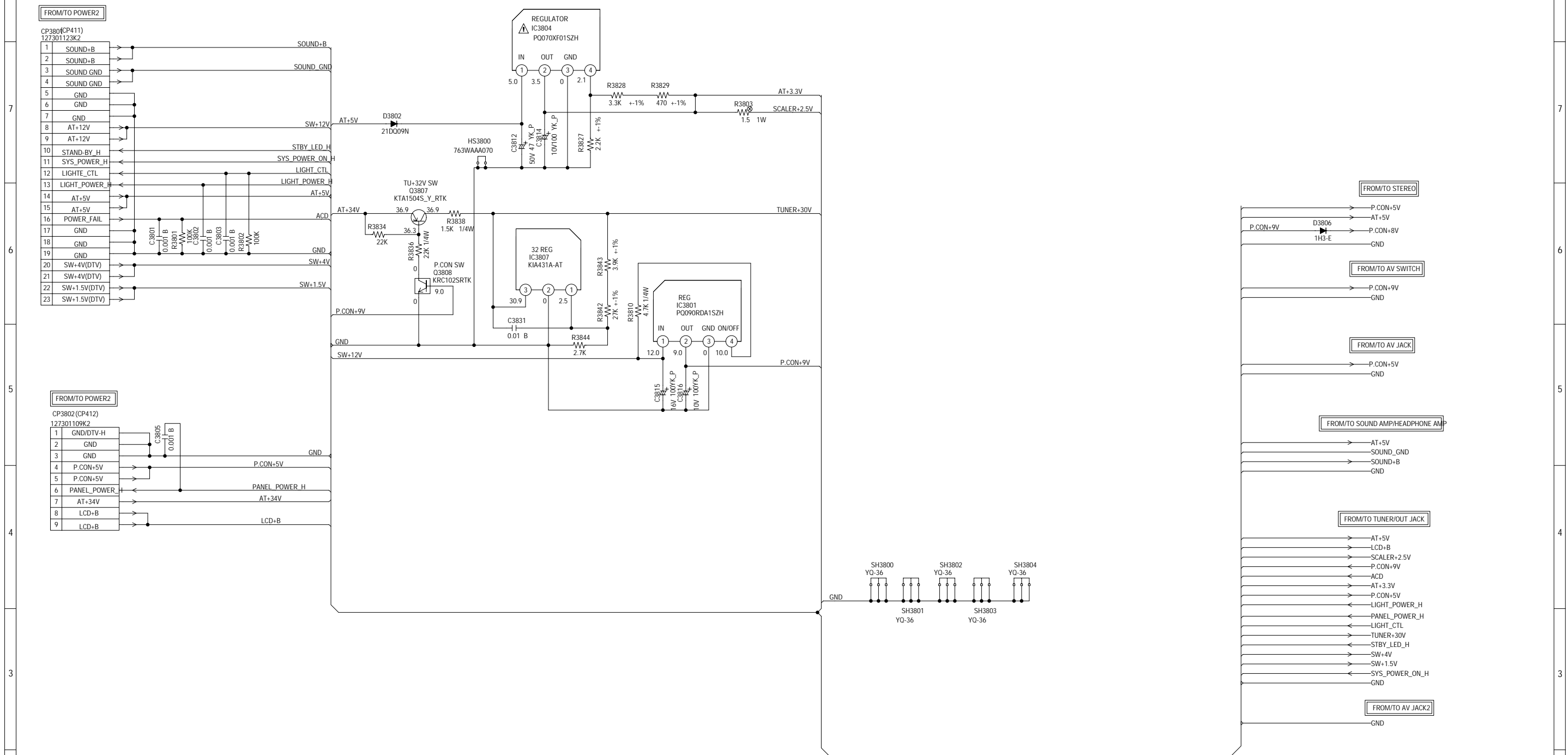


PCBD20
CMF101

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.


POWER5 SCHEMATIC DIAGRAM
(AV PCB)






NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

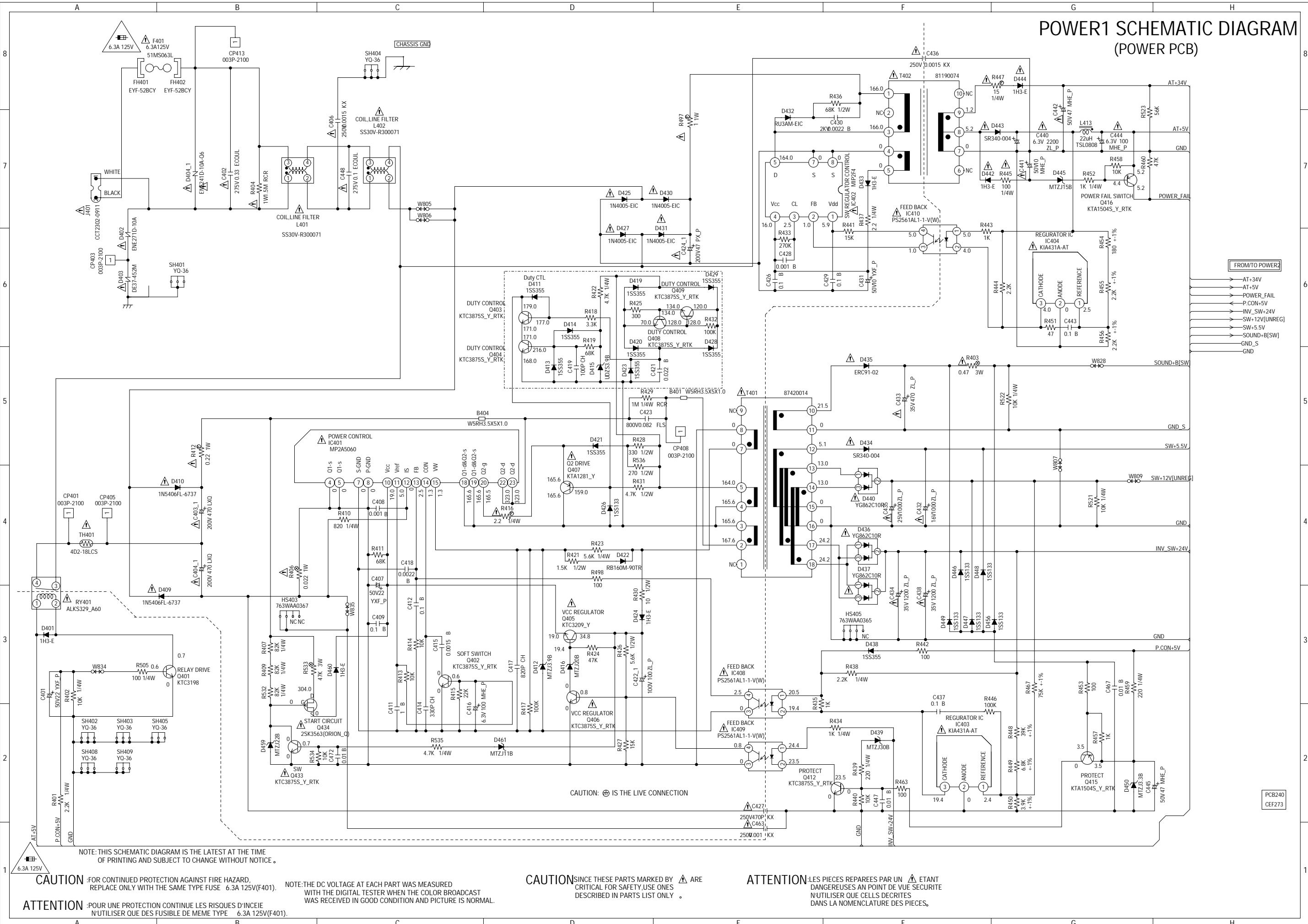
ATTENTION: LES PIÈCES RÉPARÉES PAR UN  ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

CAUTION: DIGITAL TRANSISTOR  

PCBD20
CMF101

POWER1 SCHEMATIC DIAGRAM
(POWER PCB)



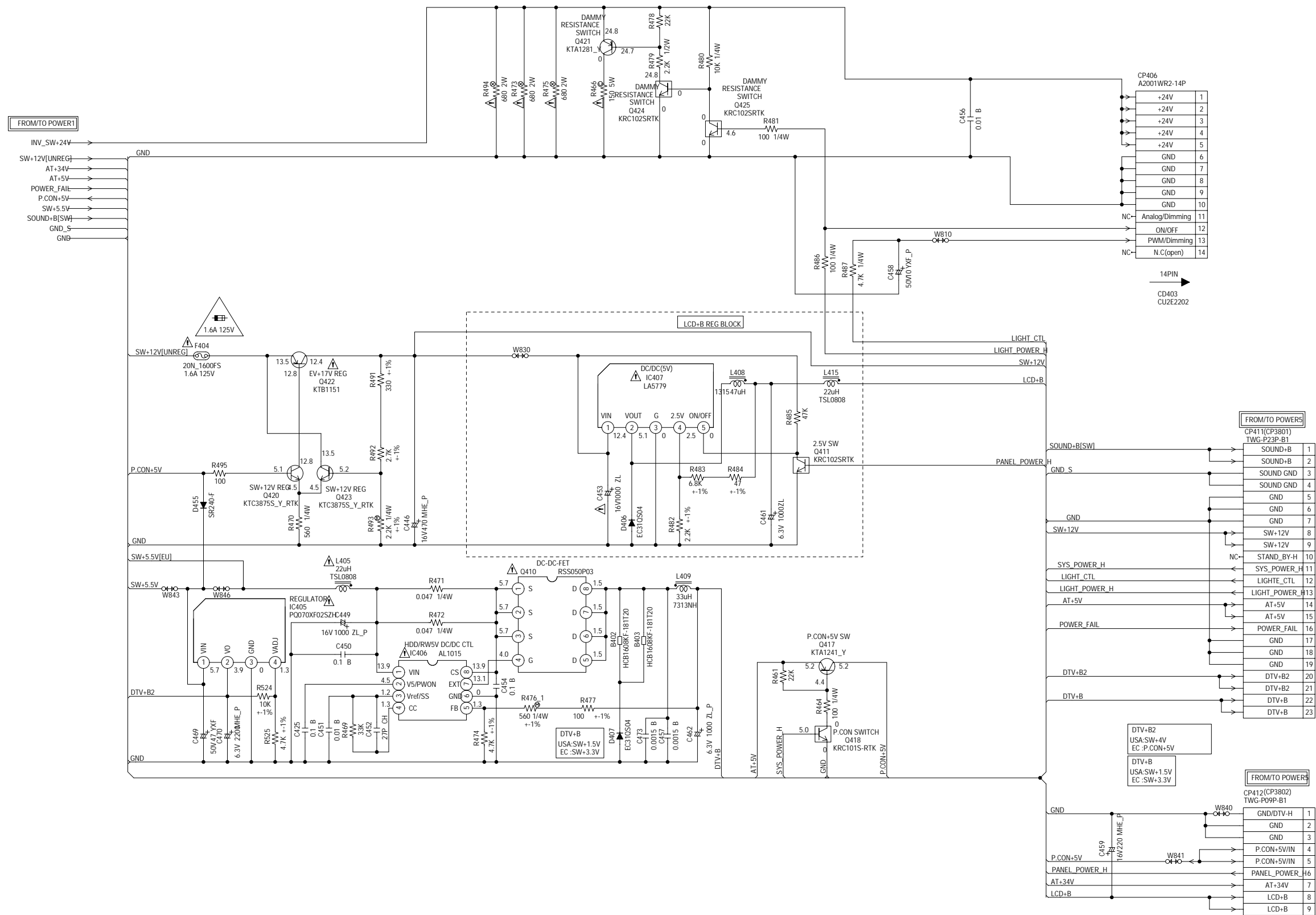
CAUTION : FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE 6.3A 125V(F401).
ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE
N'UTILISER QUE DES FUSIBLE DE MEME TYPE 6.3A 125V(F401).

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED BY ⊕ ARE
CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.



ATTENTION: LES PIECES REPARÉES PAR UN ⊕ ÉTANT
DANGEREUSES AN POINT DE VUE SECURITE
N'UTILISER QUE CELLS DECRITES
DANS LA NOMENCLATURE DES PIECES.


POWER2 SCHEMATIC DIAGRAM (POWER PCB)



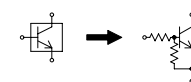
PCB240
CEF273

CAUTION:  IS THE LIVE CONNECTION

CAUTION SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY .

ATTENTION: LES PIÈCES RÉPARÉES PAR UN  ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: DIGITAL TRANSISTOR



CAUTION :FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE 1.6V 125V(F404).

ATTENTION :POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE
N'UTILISER QUE DES FUSIBLE DE MEME TYPE 1.6V 125V(F404).

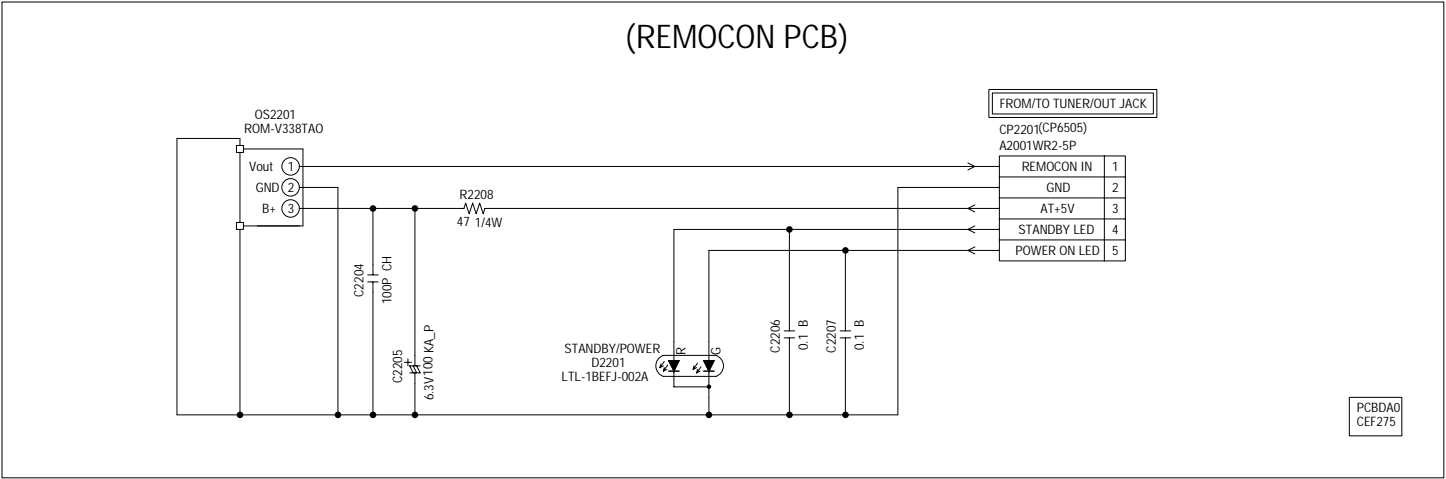
CAUTION :F404 IS MANUFACTURED BY SKYGATE CO.,LTD., TYPE 20N.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

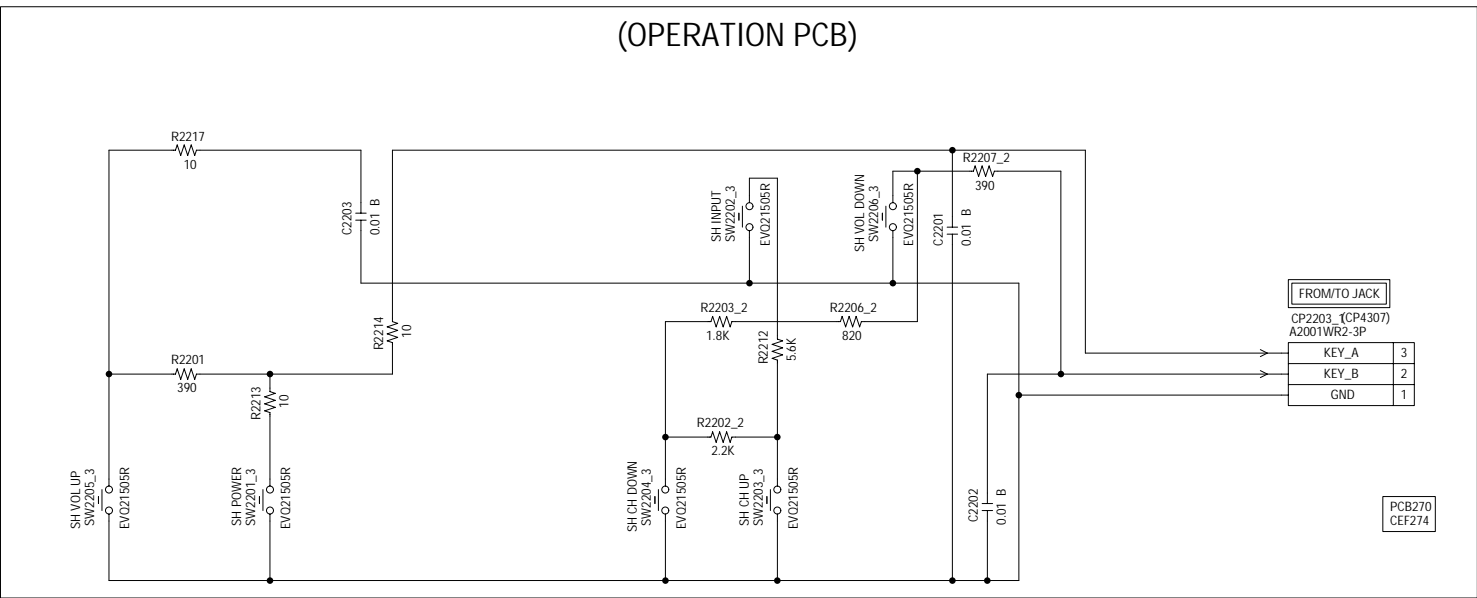
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

OPERATION/REMOCON SCHEMATIC DIAGRAM

(REMOCON PCB)



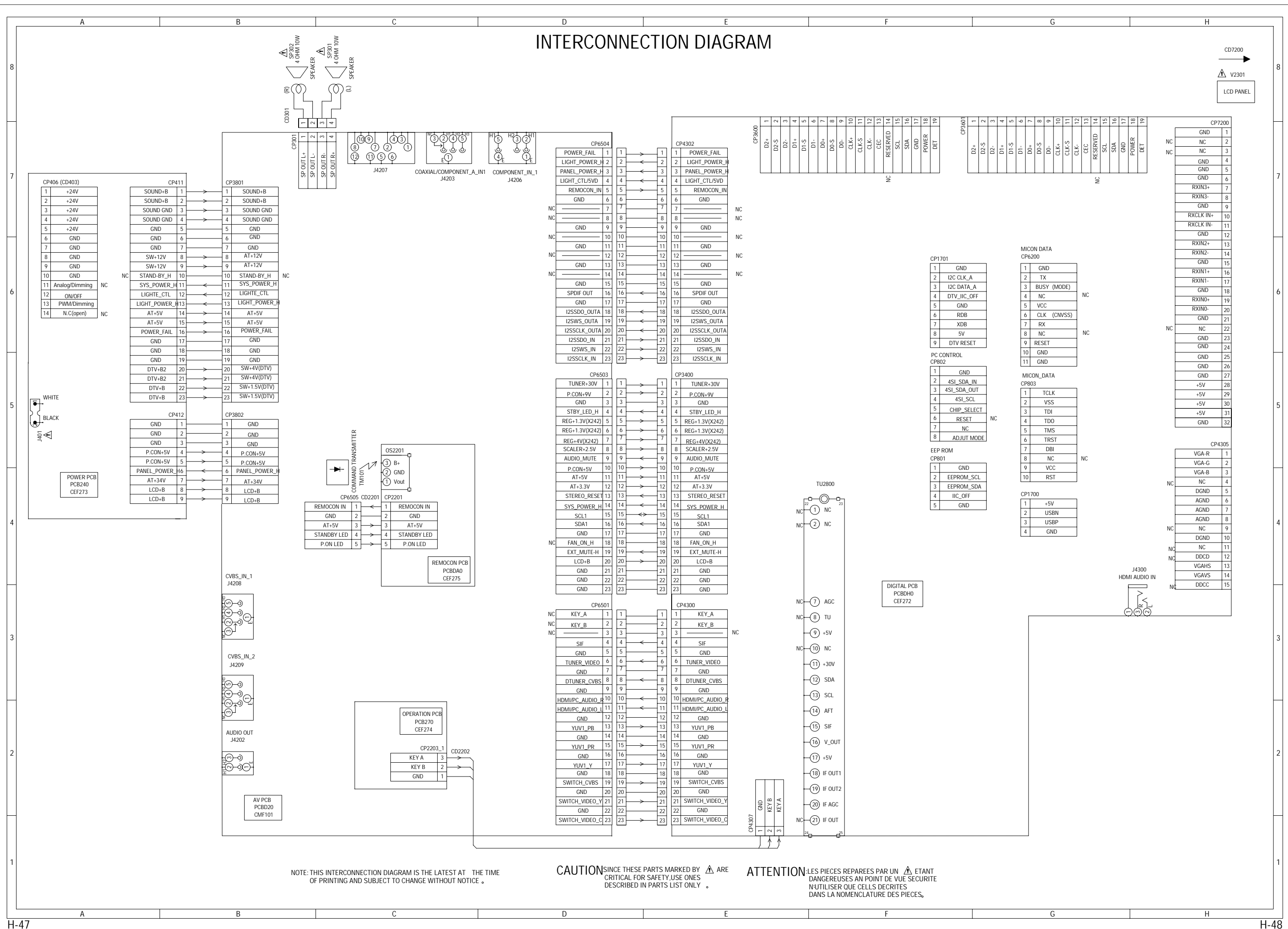
(OPERATION PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE .

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

INTERCONNECTION DIAGRAM

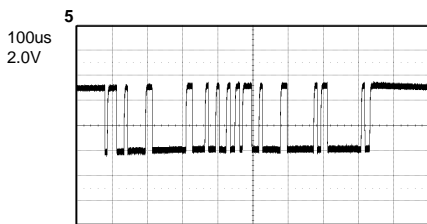
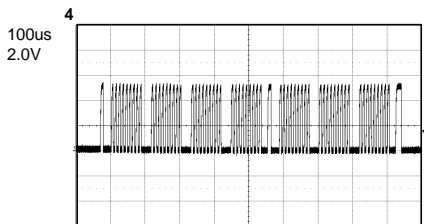
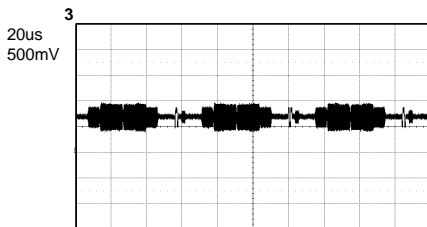
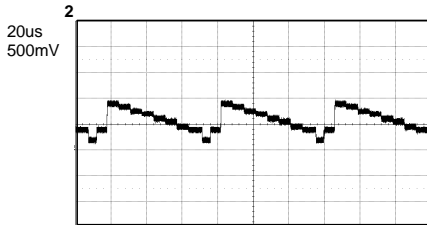
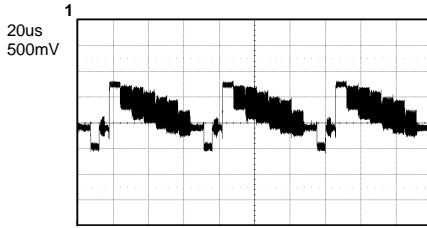


CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

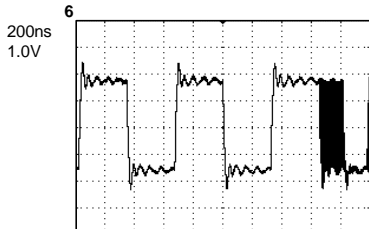
ATTENTION LES PIECES REPARÉES PAR UN ÉTANT DANGEREUSES AU POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

WAVEFORMS

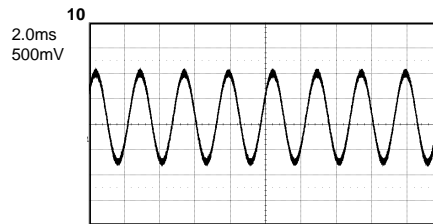
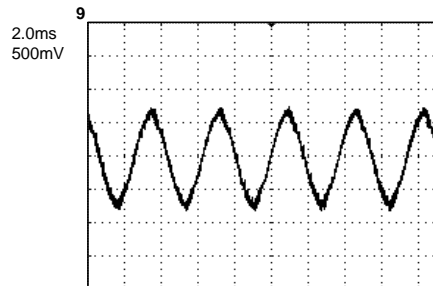
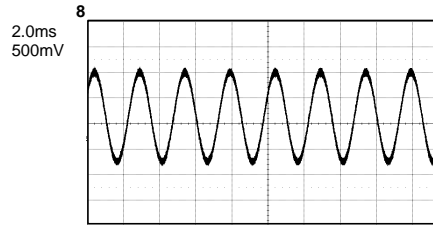
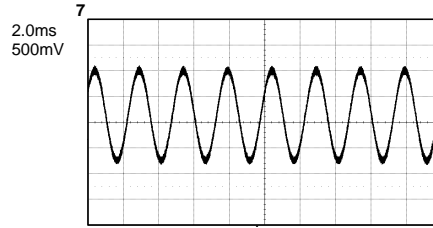
AV SWITCH



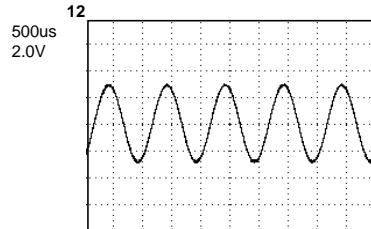
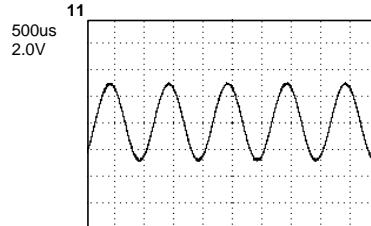
AV JACK



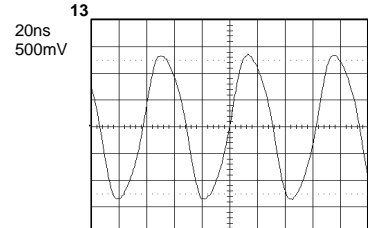
SOUND AMP



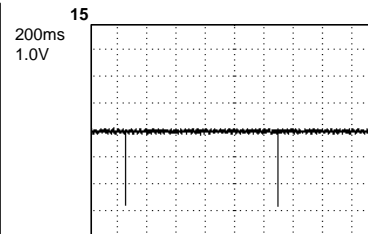
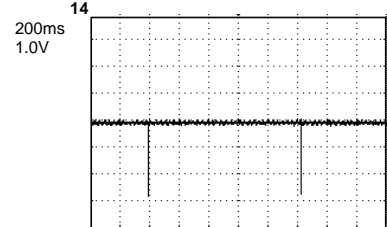
AV JACK2



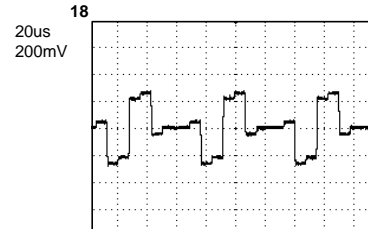
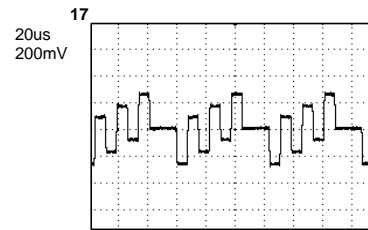
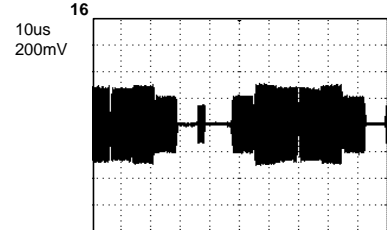
SCALER1



SCALER2

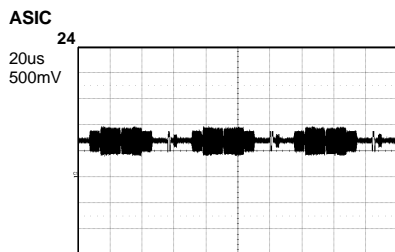
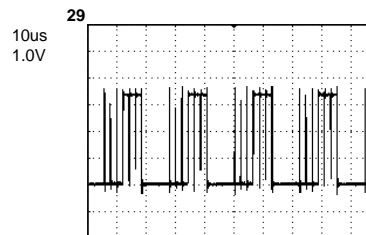
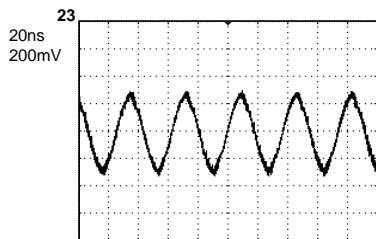
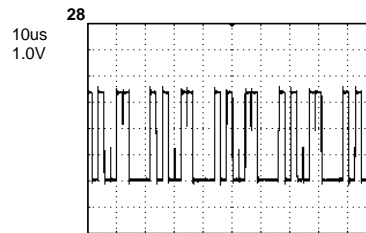
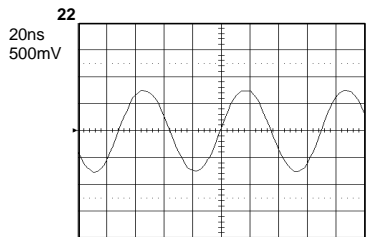
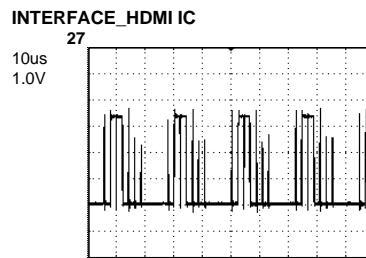
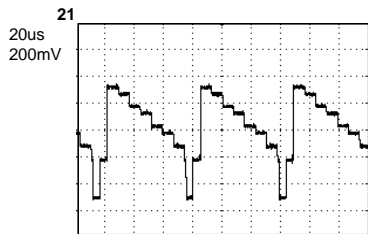
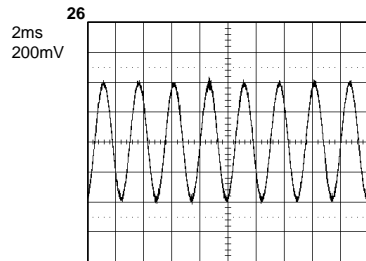
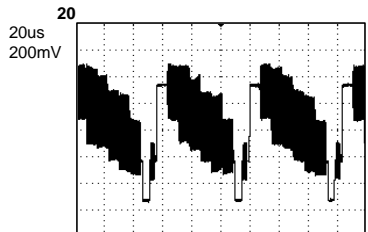
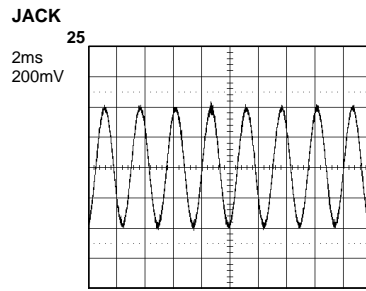
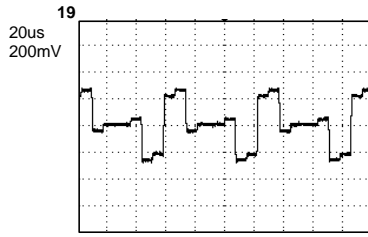


SCALER3



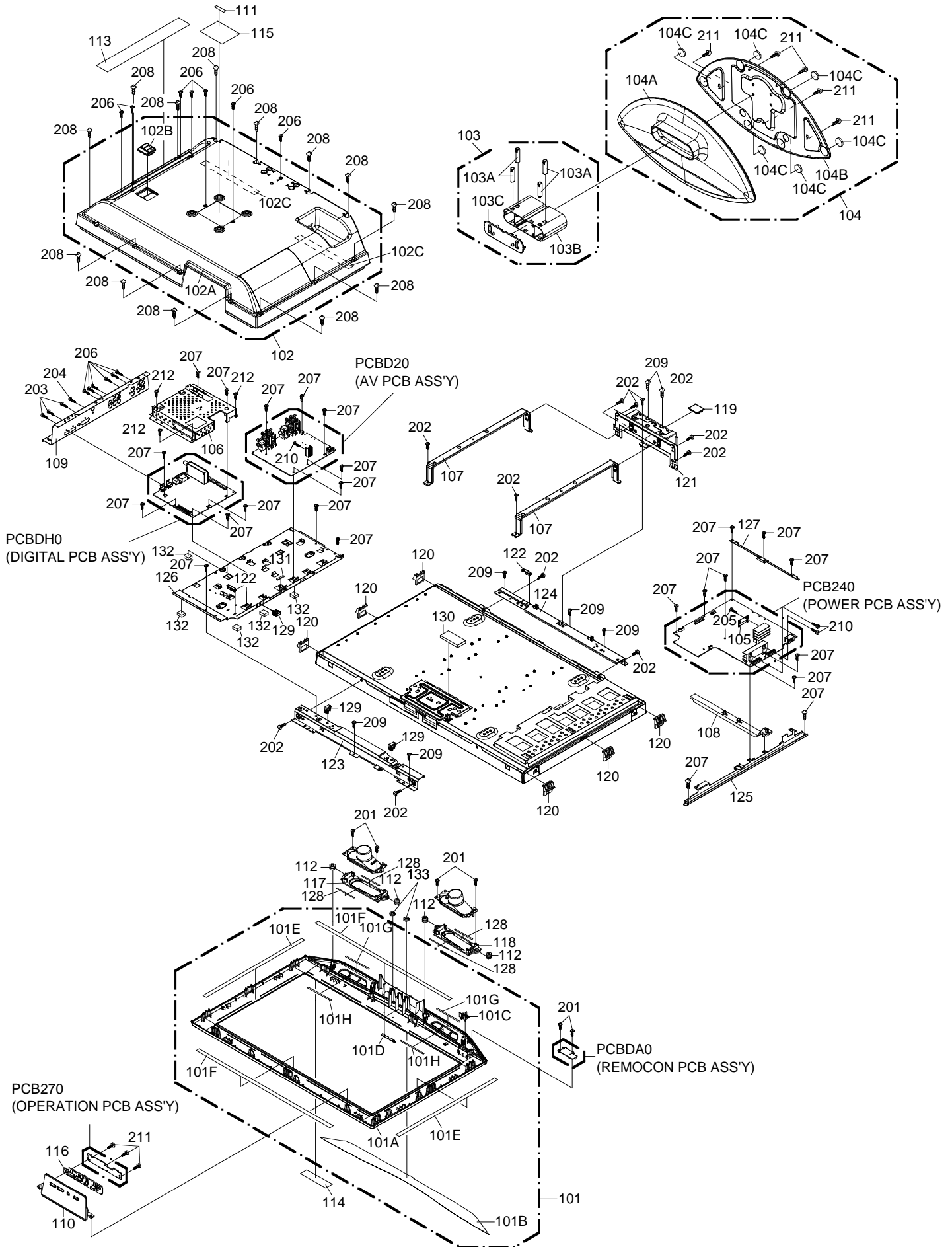
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

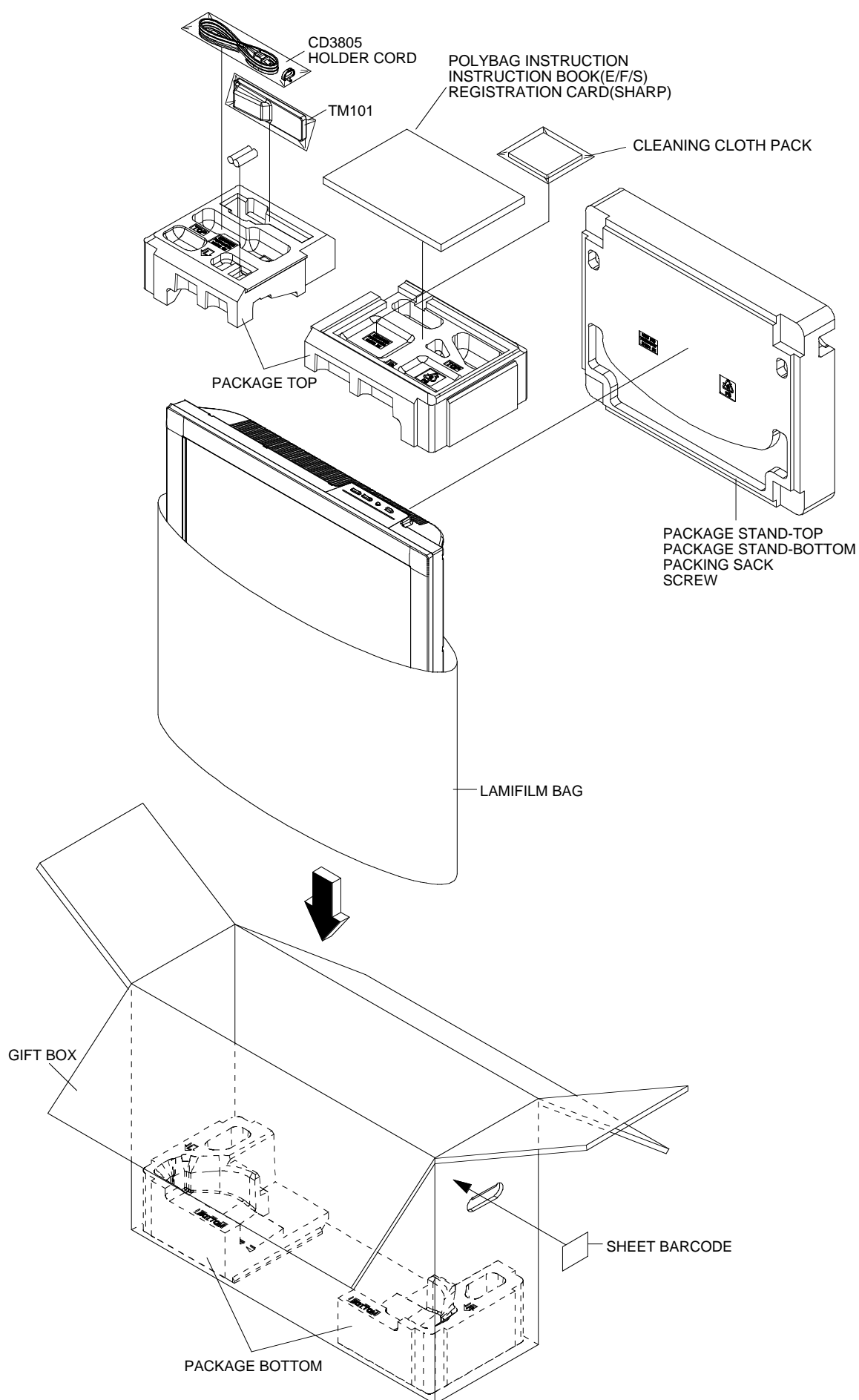


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

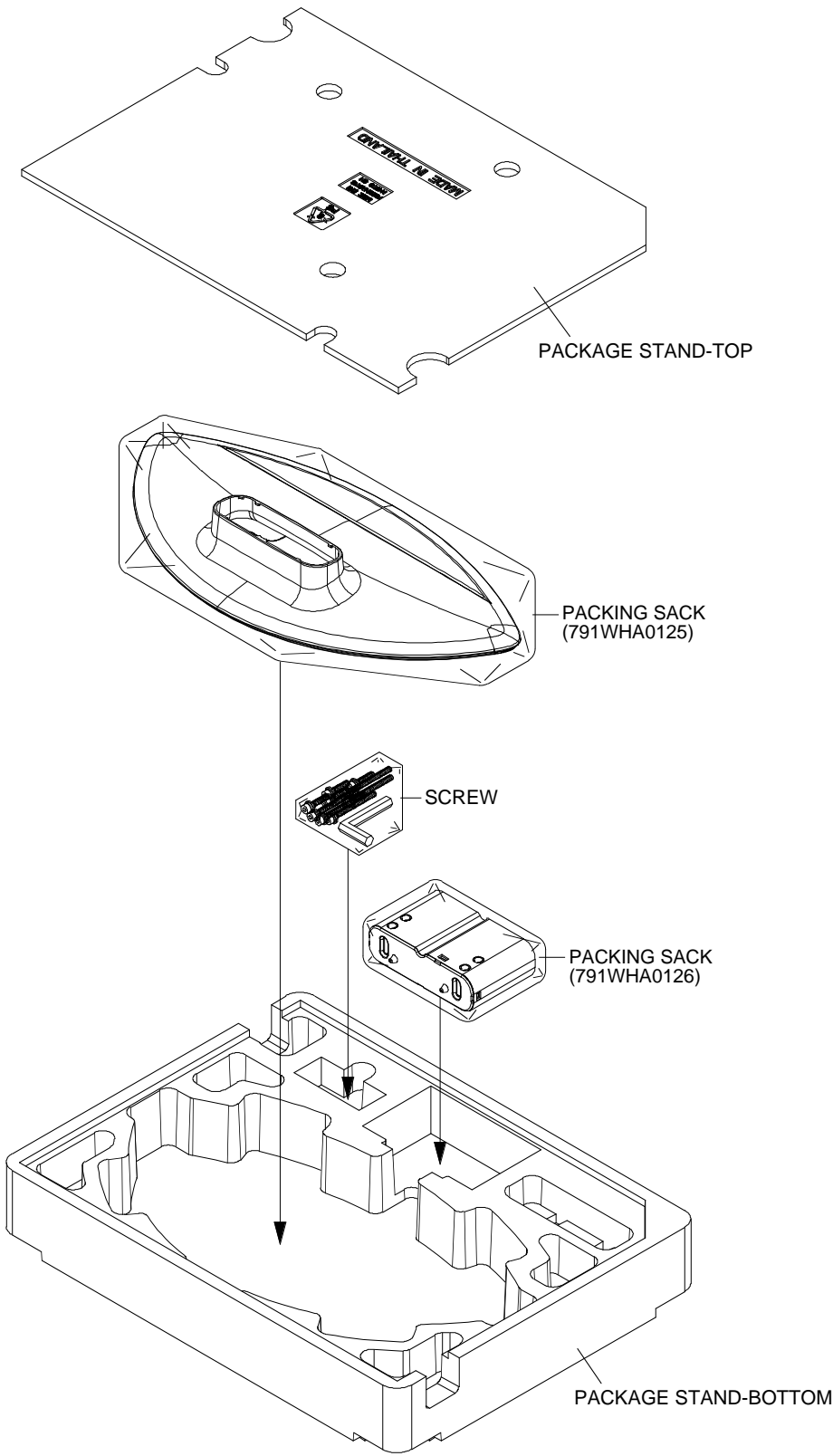
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



**MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)**



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
101	7A701A919A	FRONT CABI ASS'Y
101A	701WPJD467	CABINET FRONT
101B	702WNB0014	SHEET SPEAKER
101C	713WPA0415	GLASS LED
101D	7235270040	BADGE BRAND
101E	800WQ0A092	FELT SHEET
101F	800WQ00102	FELT SHEET 9x730xT0.5
101G	800WQ00127	FELT SHEET
101H	800WQ00132	FELT SHEET
102	7A7020120A	BACK CABI ASS'Y
102A	702WPA1288	CABINET BACK
102B	706WPA0027	COVER CONNECTOR
102C	800WQ0A108	FELT SHEET
103	7A7640006A	FRAME STAND ASS'Y
103A	704WPA0081	HOLDER STAND
103B	761WEA0035	FRAME STAND
103C	761WPA0470	COVER FRAME STAND
104	7A7040033A	STAND ASS'Y
104A	704WPA0078	STAND
104B	761WSB0054	ANGLE STAND
104C	800WFA0120	CUSHION LEG
105	761WSA0459	SHIELD IC
106	752WSA0644	SHIELD DIGITAL
107	761WSA0472	ANGLE MAIN
108	761WPA0475	HOLDER PCB
109	761WSB0056	PLATE JACK
110	711WPD0729	PLATE BUTTON
111	722000A574	SHEET SERIAL
112	800WR00084	DAMPER SPEAKER
113	7230008308	SHEET JACK
114	7230008313	POP LABEL
115	723527A058	SHEET RATING
116	735WPB0360	BUTTON FRAME
117	761WPA0473	HOLDER SPEAKER-L
118	761WPA0474	HOLDER SPEAKER-R
119	761WPA0477	COVER HINGE
120	761WPA0476	HOLDER PANEL
121	761WSA0466	ANGLE HINGE
122	899RFC21V0	HOLDER CORD
123	761WSA0467	ANGLE LCD TOP
124	761WSA0468	ANGLE LCD BOTTOM
125	761WSA0469	ANGLE PCB-1
126	761WSA0470	ANGLE PCB-2
127	761WSA0538	ANGLE PCB-3
128	800WQ00127	FELT SHEET
129	899RLWC2SV	HOLDER WIRE
130	800WFA0056	CUSHION 25x50xT4
	800WFAA032	CUSHION 25x50xT4
131	8965TS0230	CUSHION W6/H2/L30
132	8965TS1210	CUSHION W10/H12/L10
133	800WB0A007	FIBER WASHER
201	8110630A0U	SCREW TAP TITE(P)
202	810A14080U	SCREW WASHER(A)
203	810213080S	SCREW PAN
204	810223040S	SCREW BIND
205	810763080U	SCREW TAP TITE(S)
206	810923080S	SCREW TAP TITE(B)
207	810923080U	SCREW TAP TITE(B)
208	8110230B5S	SCREW TAP TITE(P)
209	8117540A0U	SCREW TAPPING(B0)
210	8109I30A0U	SCREW TAP TITE(B)
211	811063080U	SCREW TAP TITE(P)
212	810923060U	SCREW TAP TITE(B)
---	723000D535	SHEET BAR CODE
---	774WPA0011	HOLDER CORD
---	791WHA0125	PACKING SACK
---	791WHA0126	PACKING SACK
---	791WHA0129	LAMIFILM BAG
---	792WHA0714	PACKAGE TOP
---	792WHA0715	PACKAGE BOTTOM
---	792WHA0716	PACKAGE STAND TOP
---	792WHA0717	PACKAGE STAND BOTTOM
---	793WCDD445	GIFT BOX
---	89001122A2	SCREW
---	890CCOR001	CLEANING CLOTH PACK
---	J31C0331A	INSTRUCTION BOOK(E/F/S)
---	J3Y00417A	REGISTRATION CARD(SHARP)
---	JB5ND200	POLYBAG INSTRUCTION(RED CAUTION)

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
REMOCON PCB ASS'Y			
*** PCB ***			
PCBDA0	A31C03EDA0	REMOCON PCB ASS'Y	CEF275A
*** DIODES ***			
D2201	0021E9Q010	LED	LTL-1BEFJ-002A
*** CONNECTORS ***			
CP2201	069S250639	CONNECTOR PCB SIDE	A2001WR2-5P
*** OTHERS ***			
OS2201	077A033001	REMOTE RECEIVER	ROM-V338TAO
DIGITAL PCB ASS'Y			
*** PCB ***			
PCBDH0	A31C03EDH0	DIGITAL PCB ASS'Y	CEF272A
*** DIODES ***			
D801	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D802	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D804	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D805	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D807	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D809	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D810	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D812	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D813	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D814	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D1702	DD7R20S300	DIODE SCHOTTKY	RB520S-30-TE61
D1703	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D3400	D28R1QS040	DIODE	EC31QS04-TE12L
D3401	D28R11FS20	DIODE	EC11FS2-TE12L
D3402	D28R1QS040	DIODE	EC31QS04-TE12L
D3405	D28R1QS040	DIODE	EC31QS04-TE12L
D3406	D28R1QS040	DIODE	EC31QS04-TE12L
D3602	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3603	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3604	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3605	D77R1A1R10	DIODE VARISTA	AVRL161A1R1NT
D3606	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D3607	DD7R20S300	DIODE SCHOTTKY	RB520S-30-TE61
D3608	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D3609	DD7R20S300	DIODE SCHOTTKY	RB520S-30-TE61
D3626	DD7R60L400	DIODE SCHOTTKY	RB160L-40-TE25
D3627	D28R1QS040	DIODE	EC31QS04-TE12L
D3628	D28R1QS040	DIODE	EC31QS04-TE12L
D4303	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D4304	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D6200	DD7R20S300	DIODE SCHOTTKY	RB520S-30-TE61
D6202	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D6203	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D6204	DD7R20S300	DIODE SCHOTTKY	RB520S-30-TE61
*** ICS ***			
IC801	S31C03EE01	MEMORY DATA	M24256-BWMN6TP
IC1701	ICRJ002BN0	IC	AT24C02BN-10SU-1.8
IC1703	S31C03EF01	MEMORY DATA	HY27US08281A-TPCB
IC2401	IFNMEX2420	IC	X242
IC2402	IGGM005120	IC	HYB18T512161BF-25
△ IC3400	I07F078200	IC	BD7820FP-E2
IC3401	I57F035040	IC	BD3504FVM
△ IC3402	I07F078200	IC	BD7820FP-E2
△ IC3403	TJ7M65N030	FET	RSS065N03FL16TB

ELECTRICAL REPLACEMENT PARTS LIST

IC3404	I07F078200	IC	BD7820FP-E2
△ IC3405	I07F078200	IC	BD7820FP-E2
△ IC3406	I07F078200	IC	BD7820FP-E2
IC3600	IG1F090250	IC	SI19025CTU
IC3601	S31C03EE02	MEMORY DATA	BR24L02F-WE2
IC3602	S31C03EE03	MEMORY DATA	BR24L02F-WE2
△ IC3603	I07F078200	IC	BD7820FP-E2
△ IC3604	I07F078200	IC	BD7820FP-E2
IC3901	S31C03EM01	MEMORY DATA	R8J01047A71BG
IC6200	I9UF032290	IC	PST3229NR
IC6201	S31C03EM02	MEMORY DATA	R5F21124FP

*** TRANSISTORS ***

Q800	T43A938000	FET	2SK393800L
Q801	T43A938000	FET	2SK393800L
Q1702	T43A938000	FET	2SK393800L
Q1703	T43A938000	FET	2SK393800L
Q1704	T43A938000	FET	2SK393800L
Q1705	T43A938000	FET	2SK393800L
Q1706	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
Q1708	T43A938000	FET	2SK393800L
Q3400	TNAAC05002	COMPOUND TRANSISTOR	KRC103SRTK
△ Q3401	T77J011320	TRANSISTOR SILICON	2SB1132T100(Q,R)
Q3402	TAAA01664Y	TRANSISTOR SILICON	KTA1664-Y-RTF/P
Q3403	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q3604	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3605	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q3606	T2AA5132E0	FET	KTK5132E-RTK/P
Q3607	T2AA5132E0	FET	KTK5132E-RTK/P
Q3608	T2AA5132E0	FET	KTK5132E-RTK/P
Q3610	T2AA5132E0	FET	KTK5132E-RTK/P
Q3612	T2AA5132E0	FET	KTK5132E-RTK/P
Q3613	T2AA5132E0	FET	KTK5132E-RTK/P
Q4300	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q4301	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4302	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4305	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4306	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4307	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4309	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4311	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4312	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4313	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4314	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q6201	T43A938000	FET	2SK393800L
Q6203	T43A938000	FET	2SK393800L
Q6207	T43A938000	FET	2SK393800L

*** COILS ***

B800	024HC51816	CORE,BEADS	HCB1608KF-181T20
B801	024HC51816	CORE,BEADS	HCB1608KF-181T20
B802	024HC51816	CORE,BEADS	HCB1608KF-181T20
B1700	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1701	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1702	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1703	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1704	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1705	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1707	024HC56013	CORE,BEADS	FCM1608KF-601T02
B1708	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1709	024HC56013	CORE,BEADS	FCM1608KF-601T02
B1710	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1711	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1712	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1713	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1714	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1715	024HC51513	CORE,BEADS	FCM1608KF-151T06
B1716	024HC51023	CORE,BEADS	FCM1608KF-102T02
B1717	024HC51023	CORE,BEADS	FCM1608KF-102T02
B1718	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2800	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2801	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2802	024HC51023	CORE,BEADS	FCM1608KF-102T02

ELECTRICAL REPLACEMENT PARTS LIST

B2803	024HC51023	CORE,BEADS	FCM1608KF-102T02
B2804	024HC51023	CORE,BEADS	FCM1608KF-102T02
B3602	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3603	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3604	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3605	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3606	024HC56005	CORE,BEADS	FCM1608CF-600T06
B3607	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3608	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3609	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4300	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4301	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4302	024NC51021	CORE,BEADS	EBMS160808A102_RDC45
B4303	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4304	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4313	024HC51023	CORE,BEADS	FCM1608KF-102T02
B4314	024HC51023	CORE,BEADS	FCM1608KF-102T02
B4315	024HC51023	CORE,BEADS	FCM1608KF-102T02
B7200	024HC51816	CORE,BEADS	HCB1608KF-181T20
B7201	024HC51816	CORE,BEADS	HCB1608KF-181T20
L2801	0216SD100J	COIL	10 UH
L3603	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3604	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3605	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3606	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3607	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3608	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3609	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L3610	02D6000068	COIL CHOKE	ACM2012D-900-2P-T00
L4306	0216S8220K	COIL	22 UH
L4307	0216S8220K	COIL	22 UH
L4308	0216S8220K	COIL	22 UH
*** JACKS ***			
J4300	060J131019	HEADPHONE JACK	MSJ-2000B_AG(O87)
*** CONNECTORS ***			
CP801	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P
CP802	069S280629	CONNECTOR PCB SIDE	A2001WV2-8P
CP803	069S2A0629	CONNECTOR PCB SIDE	A2001WV2-10P
CP1700	069AAA1009	CONNECTOR PCB SIDE	YKF45-0036N
CP1701	069S290629	CONNECTOR PCB SIDE	A2001WV2-9P
CP3400	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP3600	0694YJ3018	CONNECTOR PCB SIDE	1903015-3
CP3601	0694YJ3018	CONNECTOR PCB SIDE	1903015-3
CP4300	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4302	06CK7N0301	CORD CONNECTOR	TWG-P23P-A1
CP4307	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
CP6200	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
*** CRYSTAL & CERAMIC OSCILLATORS ***			
X800	100YT02725	CRYSTAL	FCX-03-27000J61226
X1700	100DT02503	CRYSTAL	SMD-49
X3600	100DT02801	CRYSTAL	SMD-49
X6201	100GT01615	CRYSTAL	B16000E007
*** TUNER ***			
TU2800	0164100023	DIGITAL TUNER	ENG36E03KRF
*** NETWORKS ***			
NR1700	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1701	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1702	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1703	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1704	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1705	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1706	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR1707	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR3600	110P4330M5	R,NETWORK	4D02WGJ0330TCE

ELECTRICAL REPLACEMENT PARTS LIST

NR3601	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR3602	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR3603	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR3604	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR3605	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR7200	110P4220M5	R,NETWORK	4D02WGJ0220TCE
NR7201	110P4220M5	R,NETWORK	4D02WGJ0220TCE
*** OTHERS ***			
CP4305	06G2S21501	CONNECTOR PCB SIDE	D229FD015G107BY
CP7200	06G3VWT01A	CONNECTOR PCB SIDE	20389-Y30E
SH3400	126D000044	TERMINAL PIN	YQ-36
SH3401	126D000044	TERMINAL PIN	YQ-36
SH3402	126D000044	TERMINAL PIN	YQ-36
SH3403	126D000044	TERMINAL PIN	YQ-36
SH3404	126D000044	TERMINAL PIN	YQ-36
SH3405	126D000044	TERMINAL PIN	YQ-36
AV PCB ASS'Y			
*** PCB ***			
PCBD20	A31C03ED20	AV PCB ASS'Y	CMF101A
*** RESISTORS ***			
△ R3803	R3X1811R5J	R,METAL OXIDE	1.5 OHM 1W
*** CAPACITORS ***			
C337	E7EYF3102M	CE	1000 UF 25V
C339	E7EYF3102M	CE	1000 UF 25V
*** DIODES ***			
D901	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D902	D97U08R21B	DIODE,ZENER	MTZJ8.2B T-77
D903	DE7RB5R62B	DIODE ZENER	UDZS5.6B TE-17
D3802	D28T21DQN9	DIODE SCHOTTKY	21DQ09N-TA2B1
D3806	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D6503	DE7RB1202B	DIODE ZENER	UDZS12B TE-177
D6508	DE7RB1202B	DIODE ZENER	UDZS12B TE-177
D6510	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D6517	DE7RB1202B	DIODE ZENER	UDZS12B TE-177
D6518	DE7RB1202B	DIODE ZENER	UDZS12B TE-177
D6519	DE7RB1202B	DIODE ZENER	UDZS12B TE-177
*** ICS ***			
IC301	I0KJP89320	IC	TDA8932T
IC904	I01F05853B	IC	AN15853B-E1
IC905	I19FF44401	IC	MSP4440G-QA-C13-000
△ IC3801	I0GA9090R0	IC	PQ090RDA1SZH
△ IC3804	I0GA9XF010	IC	PQ070XF01SZH
△ IC3807	I1KJ9A431A	IC	KIA431A-AT
*** TRANSISTORS ***			
Q301	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q302	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q303	TPAAA05001	COMPOUND TRANSISTOR	KRA101SRTK
Q304	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q305	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q306	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q901	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q902	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q3807	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q3808	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q4201	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4204	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4206	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4207	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q4209	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK

ELECTRICAL REPLACEMENT PARTS LIST

Q4214	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q6500	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q6501	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q6503	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q6504	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q6505	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q6511	T2AA5132E0	FET	KTk5132E-RTK/P
Q6513	T2AA5132E0	FET	KTk5132E-RTK/P
Q6515	TPAAC05002	COMPOUND TRANSISTOR	KRA103SRTK
Q6516	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK

*** COILS ***

B301	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B302	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B303	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B304	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B305	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B306	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B901	024HC56005	CORE,BEADS	FCM1608CF-600T06
B902	024HC56005	CORE,BEADS	FCM1608CF-600T06
B903	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4204	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4205	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4208	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4209	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4214	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4215	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4216	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4217	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4218	024HC56005	CORE,BEADS	FCM1608CF-600T06
B4219	024HC56005	CORE,BEADS	FCM1608CF-600T06
B6504	024HT03553	CORE,BEADS	W5RH3.5X5X1.0

L300	021U0L220M	COIL	22 UH
L301	021U0L220M	COIL	22 UH
L901	021673100K	COIL	10 UH
L902	021673100K	COIL	10 UH
L903	021673100K	COIL	10 UH
L4201	021LA6220J	COIL	22 UH
L4202	021LA6220J	COIL	22 UH
L4203	021LA6220J	COIL	22 UH
L4204	021LA6220J	COIL	22 UH
L4205	021LA6220J	COIL	22 UH
L4206	021LA6220J	COIL	22 UH
L4208	021LA6101K	COIL	100 UH
L4209	021LA6220J	COIL	22 UH
L4211	021LA6220K	COIL	22 UH
L4212	021673470K	COIL	47 UH
L6502	021673470K	COIL	47 UH
L6503	021LA6470K	COIL	47 UH
L6504	021LA6470K	COIL	47 UH
L6505	021LA6470K	COIL	47 UH

*** JACKS ***

J4202	060K411041	RCA JACK	AV2-13P2-07H
J4203	060R431037	RCA JACK	RCA-349-00C-05
J4206	060K411053	RCA JACK	AV3-13P2-31S1
J4207	063D700017	JACK	MDC-021V-AA_LF
J4208	060R431035	RCA JACK	RCA-349-00C-02
J4209	060R431035	RCA JACK	RCA-349-00C-02

*** CONNECTORS ***

CP301	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP3801	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP3802	069779M020	CONNECTOR PCB SIDE	127301109K2
CP6501	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP6503	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP6504	06977NM020	CONNECTOR PCB SIDE	127301123K2
CP6505	069S250629	CONNECTOR PCB SIDE	A2001WV2-5P

*** CRYSTAL & CERAMIC OSCILLATORS ***

ELECTRICAL REPLACEMENT PARTS LIST

X901	100GT01806	CRYSTAL	B18432E005
*** OTHERS ***			
SH3800	126D000044	TERMINAL PIN	YQ-36
SH3801	126D000044	TERMINAL PIN	YQ-36
SH3802	126D000044	TERMINAL PIN	YQ-36
SH3803	126D000044	TERMINAL PIN	YQ-36
SH3804	126D000044	TERMINAL PIN	YQ-36
POWER PCB ASS'Y			
*** PCB ***			
PCB240	A31C03E240	POWER PCB ASS'Y	CEF273A
*** RESISTORS ***			
△ R403	R3X28BR47J	R,METAL OXIDE	0.47 OHM 3W
△ R404	RC31X1155J	RC	1.5M OHM 1W
△ R406	R3K681S22J	R,METAL OXIDE	0.022 OHM 1W
△ R412	R63881R22J	R,FUSE	0.22 OHM 1W
△ R416	R655842R2J	R,FUSE	2.2 OHM 1/4W
△ R447	R65584150J	R,FUSE	15 OHM 1/4W
△ R466	R5X2AD151J	R,CEMENT	150 OHM 5W
△ R473	R3K78A681J	R,METAL OXIDE	680 OHM 2W
△ R475	R3K78A681J	R,METAL OXIDE	680 OHM 2W
△ R494	R3K78A681J	R,METAL OXIDE	680 OHM 2W
△ R497	R63881010J	R,FUSE	1 OHM 1W
△ R498	R803R9101J	RC	100 OHM 1/16W
R533	R3K28B473J	R,METAL OXIDE	47K OHM 3W
*** CAPACITORS ***			
△ C402	P2122B334M	CMP	0.33 UF 275V ECQUL
△ C403	E77CHC471M	CE	470 UF 200V
△ C404	E77CHC471M	CE	470 UF 200V
△ C406	CD39E0ME3M	CC	0.0015UF 250V
C422	E7EY78101D	CE	100 UF 100V
C423	P4NAE6823H	CMPP	0.082 UF 800V
△ C424	E8E6FC470M	CE	47 UF 200V
△ C427	CD39B0MQ2K	CC	470 PF 250V
△ C432	E7EYF2102M	CE	1000 UF 16V
△ C433	E7EYF4471M	CE	10*20 470 UF 35V
△ C434	E7EYF4122M	CE	1200 UF 35V
△ C435	E7EYF3102M	CE	1000 UF 25V
△ C436	CD39E0ME3M	CC	0.0015UF 250V
△ C438	E7EYF4122M	CE	1200 UF 35V
△ C440	E7EYF0222M	CE	2200 UF 6.3V
△ C442	E7ESU5470M	CE	47 UF 50V
△ C444	E7ESU0101M	CE	100 UF 6.3V
△ C448	P2122B104M	CMP	0.1 UF 275V ECQUL
C449	E7EYF2102M	CE	1000 UF 16V
△ C453	E7EYF2102M	CE	1000 UF 16V
△ C463	CD39E0M13M	CC	0.001 UF 250V
C470	E7ESF0222M	CE	2200 UF 6.3V
*** DIODES ***			
D401	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D402	D6E027110A	DIODE VARISTA	ENE271D-10A
△ D403	DOU044520M	DIODE VARISTA	DE37-452M-S00B
△ D404	D6CE24110A	DIODE VARISTA	ENE241D-10A-Q6
D406	D28R1QS040	DIODE	EC31QS04-TE12L
D407	D28R1QS040	DIODE	EC31QS04-TE12L
△ D409	D4CKN54060	DIODE SILICON	1N5406FL-6737
△ D410	D4CKN54060	DIODE SILICON	1N5406FL-6737
D411	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D412	D97U03R91B	DIODE,ZENER	MTZJ3.9B T-77
D413	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D414	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D415	DE7RB3R92B	DIODE ZENER	UDZS3.9B TE-17
D416	D97U02001B	DIODE,ZENER	MTZJ20B T-77
D419	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D420	DD7R0S3550	DIODE SILICON	1SS355 TE-17

ELECTRICAL REPLACEMENT PARTS LIST

D421	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D422	DD7R60M900	DIODE SCHOTTKY	RB160M-90TR
D423	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D424	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D425	D2WXN40050	DIODE SILICON	1N4005-EIC
D426	D1VT001330	DIODE,SILICON	1SS133T-77
△ D427	D2WXN40050	DIODE SILICON	1N4005-EIC
D428	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D429	DD7R0S3550	DIODE SILICON	1SS355 TE-17
△ D430	D2WXN40050	DIODE SILICON	1N4005-EIC
△ D431	D2WXN40050	DIODE SILICON	1N4005-EIC
D432	D2WXR03AM0	DIODE SILICON	RU3AM-EIC
D433	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D434	D2LKSR3400	DIODE SCHOTTKY	SR340-004
△ D435	D2CFC91020	DIODE SILICON	ERC91-02J11SC
△ D436	D2CA2C10R0	DIODE SCHOTTKY	YG862C10R
△ D437	D2CA2C10R0	DIODE SCHOTTKY	YG862C10R
D438	DD7R0S3550	DIODE SILICON	1SS355 TE-17
D439	D97U03001B	DIODE,ZENER	MTZJ30B T-77
△ D440	D2CA2C10R0	DIODE SCHOTTKY	YG862C10R
D442	D4AT01H3E0	DIODE RECTIFIER	1H3-E
△ D443	D2LKSR3400	DIODE SCHOTTKY	SR340-004
△ D444	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D445	D97U01501B	DIODE,ZENER	MTZJ15B T-77
D446	D1VT001330	DIODE,SILICON	1SS133T-77
D447	D1VT001330	DIODE,SILICON	1SS133T-77
D448	D1VT001330	DIODE,SILICON	1SS133T-77
D449	D1VT001330	DIODE,SILICON	1SS133T-77
D450	D97U03R31B	DIODE,ZENER	MTZJ3.3B T-77
D455	D2LXSR2400	DIODE SCHOTTKY	SR240-F
D456	D1VT001330	DIODE,SILICON	1SS133T-77
D459	D97U02201B	DIODE ZENER	MTZJ22B T-77
D460	D4AT01H3E0	DIODE RECTIFIER	1H3-E
D461	D97U01101B	DIODE,ZENER	MTZJ11B T-77

*** ICS ***

△ IC401	I2GT050600	IC	MP2A5060
△ IC402	I5SD0P2F40	IC	MIP2F4
△ IC403	I1KJ9A431A	IC	KIA431A-AT
△ IC404	I1KJ9A431A	IC	KIA431A-AT
IC405	I0GA9XF020	IC	PQ070XF02SZH
△ IC406	I1LF010150	IC	AL1015
△ IC407	I03T057790	IC	LA5779-E
△ IC408	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
△ IC409	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)
△ IC410	000220002W	PHOTO COUPLER	PS2561AL1-1-V(W)

*** TRANSISTORS ***

Q401	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
Q402	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q403	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q404	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q405	TCAT03209Y	TRANSISTOR SILICON	KTC3209_Y-AT
Q406	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q407	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
Q408	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q409	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q410	TJ7M50P030	FET	RSS050P03_TB
Q411	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q412	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q415	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q416	TAAA1504SY	TRANSISTOR SILICON	KTA1504S_Y_RTK
Q417	TAAT01241Y	TRANSISTOR SILICON	KTA1241_Y-AT
Q418	TNAAA05001	COMPOUND TRANSISTOR	KRC101S-RTK
Q420	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q421	TAAT01281Y	TRANSISTOR SILICON	KTA1281_Y
△ Q422	TBA0011510	TRANSISTOR SILICON	KTB1151
Q423	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
Q424	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
Q425	TNAAB05003	COMPOUND TRANSISTOR	KRC102SRTK
△ Q433	TCAA3875SY	TRANSISTOR SILICON	KTC3875S_Y_RTK
△ Q434	T25F035630	FET	2SK3563(ORION_Q)

ELECTRICAL REPLACEMENT PARTS LIST

*** COILS ***

B401	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B402	024HC51816	CORE,BEADS	HCB1608KF-181T20
B403	024HC51816	CORE,BEADS	HCB1608KF-181T20
B404	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
△ L401	029X000129	COIL,LINE FILTER	SS30V-R300071
△ L402	029X000129	COIL,LINE FILTER	SS30V-R300071
△ L405	02167E220K	COIL	22 UH
L408	021U0L470M	COIL	47 UH
L409	02130G330M	COIL	33 UH
L413	02167E220K	COIL	22 UH
L415	02167E220K	COIL	22 UH

*** TRANSFORMERS ***

△ T401	0487420014	TRANSFORMER,SWITCHING	87420014
△ T402	0481190074	TRANSFORMER,SWITCHING	81190074

*** JACKS ***

△ J401	064Q1A0003	JACK,AC	CCT2302-0911
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*** CONNECTORS ***

CP401	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP403	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP405	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP406	069S2E0639	CONNECTOR PCB SIDE	A2001WR2-14P
CP408	069D01001A	CONNECTOR PCB SIDE	003P-2100
CP411	06977N001B	CONNECTOR PCB SIDE	TWG-P23P-B1
CP412	069779001B	CONNECTOR PCB SIDE	TWG-P09P-B1
CP413	069D01001A	CONNECTOR PCB SIDE	003P-2100

*** FUSES ***

△ F401	081PC6R305	FUSE	51MS063L
△ F404	0835C01603	MICRO FUSE	20N_1600FS
FH401	06710T0009	HOLDER,FUSE	EYF-52BCY
FH402	06710T0009	HOLDER,FUSE	EYF-52BCY

*** RELAYS ***

△ RY401	0560V50119	RELAY	ALKS329 A60
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*** THERMISTOR ***

△ TH401	DSQ0VE4R0L	THERMISTOR	4D2-18LCS
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*** OTHERS ***

EL2401	124116281A	EYE LET	XRY16X28BD
EL2402	124120301A	EYE LET	XRY20X30BD
SH401	126D000044	TERMINAL PIN	YQ-36
SH402	126D000044	TERMINAL PIN	YQ-36
SH403	126D000044	TERMINAL PIN	YQ-36
SH404	126D000044	TERMINAL PIN	YQ-36
SH405	126D000044	TERMINAL PIN	YQ-36
SH408	126D000044	TERMINAL PIN	YQ-36
SH409	126D000044	TERMINAL PIN	YQ-36

OPERATION PCB ASS'Y

*** PCB ***

PCB270	A31C03E270	OPERATION PCB ASS'Y	CEF274A
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*** SWITCHES ***

SW2201	0504101T34	SWITCH,TACT	EVQ21505R
SW2202	0504101T34	SWITCH,TACT	EVQ21505R
SW2203	0504101T34	SWITCH,TACT	EVQ21505R
SW2204	0504101T34	SWITCH,TACT	EVQ21505R

ELECTRICAL REPLACEMENT PARTS LIST

SW2205	0504101T34	SWITCH,TACT	EVQ21505R
SW2206	0504101T34	SWITCH,TACT	EVQ21505R
*** CONNECTORS ***			
CP2203	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
AND OTHERS			
*** COILS ***			
TR7200	02AS6513C1	CORE FERRITE	E04FG441312-TX3
TR7201	02AS6513C1	CORE FERRITE	E04FG441312-TX3
*** CONNECTORS ***			
CD301	06CU144202	CORD CONNECTOR	CU144202
CD403	06CU2E2202	CORD CONNECTOR	CU2E2202
CD2201	06CU256001	CORD CONNECTOR	CU256001
CD2202	06CU233701	CORD CONNECTOR	CU233701
CD7200	06CHRU2206	CORD CONNECTOR	CHRU2206
*** AC CORD ***			
CD3805	120Q119905	CORD SET AC	P201-2476-2
*** OTHERS ***			
BT001	141R003018	BATTERY,MANGAN	GR6M
BT002	141R003018	BATTERY,MANGAN	GR6M
△ SP301	070Y056003	SPEAKER	S0412F03
△ SP302	070Y056003	SPEAKER	S0412F03
TM101	076B0MQ030	TRANSMITTER	ETR0088-010161
△ V2301	09E4132019	LCD	LK315T3LZ5CZ
RESISTOR			
	RC.....	CARBON RESISTOR	
CAPACITORS			
	CC.....	CERAMIC CAPACITOR	
	CE.....	ALUMI ELECTROLYTIC CAPACITOR	
	CP.....	POLYESTER CAPACITOR	
	CPP.....	POLYPROPYLENE CAPACITOR	
	CPL.....	PLASTIC CAPACITOR	
	CMP.....	METAL POLYESTER CAPACITOR	
	CMPL.....	METAL PLASTIC CAPACITOR	
	CMPP.....	METAL POLYPROPYLENE CAPACITOR	

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